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ORIGINAL COMMUNICATIONS.

SECONDARY MIXED INFECTION IN TYPHOID FEVER.

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Typhoid fever is a term applied heretofore to a complexus of symptoms, well recognized and defined, and accompanied by a peculiar lesion in the intestinal tract; but now to the invasion of a non-pyogenic micro-organism, however that invasion take place—whether by way of the intestinal or of the respiratory* tract, and whether or not accompanied by the classical symptoms which characterize abdominal typhus.

In this strict sense, typhoid fever is the infection of the typhoid bacillus, and its direct consequences. Any symptoms and results which are due to other micro-organisms are not parts of the typhoid disease, and must be looked upon as accidental complications. The rôle of the typhoid bacillus is now demonstrated beyond the possibility of a doubt. The bacilli are found in the greatest numbers in the infiltrated Peyer's glands, before ulceration begins. Thence they are carried to the mesenteric glands, which imperfectly act as filters and detain them a short time. In a little while the pulmonary circulation is invaded through the thoracic duct, and a pneumonia follows, which is one of the early symptoms observed in most cases of typhoid. Examination by means of sections of the lung at this time, shows capillary emboli containing the bacillus. Only a part of the microbes are retained in the capillaries of the lungs. Many, if not most of them, escape into the arterial circulation, and they are found in every organ of the body, giving rise, at times, to all the consequences that capillary embolisms entail. The spleen is enlarged, and cultures from its blood demonstrate the presence of the bacillus. Sections from the gland show small capillary emboli containing the non-vegetating microbe. The same conditions are found in the kidneys; and when the lesion is sufficient to allow the passage of albumen into the urine, the bacilli may be demonstrated either microscopically or by cultures.

An earlier invasion of the blood sometimes, if not always, takes place through the portal circulation. From the infected glands in the intestine, the bacilli force themselves through the wall of a neighboring vein, and are carried into the liver, where they are found in masses in the portal capillaries. (*Liebermeister*, pp. 105, 106).

The typhoid bacillus does not produce suppuration, it does not completely destroy living tissues, except when in masses sufficient to produce large infarctions as in the spleen and kidneys. It does produce a toxæmia or sepræmia, and later, a septicæmia, which has a tendency to self-limitation. In the light of bacteriology it seems of itself to be far less fatal than the statistics would indicate. A careful consideration of the

* Klebs, Algemeine Pathologie, June, 1887, I, 165-175.

various and grave consequences which follow this disease, leads us to think that most of them are due to secondary invasion with bacteria which have nothing to do with the disease itself, and any of which may be absent in a typical course of typhoid fever. Although the typhoid bacillus is found in the dead tissues which result from constant pressure and consequent arrest of circulation under the bony prominences of the patient, and though they vegetate and multiply there, there is no evidence that they produce any further destruction of tissue.

It is not, then, the work of the typhoid bacillus which we wish at this time to consider. Wherever the invasion of this bacillus takes place, whether in the superficial lymph-glands of the intestinal or of the respiratory tract, the inflammation in these glands due to the irritation of the bacillus and its ptomaine so diminishes their resistance that a secondary invasion with pyogenic and other bacteria is a very easy thing. Many of the pathogenic bacteria are only facultative parasites of man, living for the most part as messmates with him on the contents of his intestines, or, as some think, being necessary even to mammalian digestion. When the intestine or any part of it is dead, or the barriers which ages of association have thrown up are torn down by truamatism,or otherwise, the before harmless or even helpful bacteria set up a destructive, saprophitic colonization of the tissues of their host, and, in the neighboring living tissues they may produce suppuration, coagulation necrosis, hæmorrhagic infiltration, lymphatic engorgement, or any of the results which are so frequently demonstrated in the infectious diseases, dependent, of course, on the peculiar anatomy and physiology of the invading parasite. Of all the bacteria capable of becoming pathogenic, the pus-microbes are the most ubiquitous, and their influence is most disastrous to life. It will be well, then, to consider at some length the manner of infection with these parasites, alone, and then, afterward, some of the other kinds of microbic invasion separately.

In addition to the local lesion in the intestine or larynx, the facility of infection with the pus-microbe is increased by the general condition of the patient brought about by the simple typhoid disease. The nutrition of the tissues is reduced to a minimum, the circulation is impeded directly by numerous capillary emboli, and indirectly by a diminished nutrition of the heart muscles. The poor quality of the blood and the retarded circulation invite the formation of thrombus. The lymphatic circulation is equally impaired. While under ordinary circumstances of health, the lymph apparatus has not only a great power of resistance to bacterial invasion, but also a remarkable power of destroying the invader, a few days of typhoid infection is enough to interfere with this function materially.

The infected and engorged Peyer's gland is very soon attacked by passing suppurative bacteria. Ulceration and sloughing follow in proportion to the destruction of tissue by the second infection. At this time, the symptoms begin to show that a new factor has begun to operate. The temperature is less regular in its remissions, and takes on a septic character similar to surgical-wound diseases. The micrococci are carried on into the mesenteric glands, where they may, in favorable cases, be arrested and destroyed. The glands after being enlarged for a long time return to nearly the normal size. The fatty degenerated material is removed, and the residue becomes calcified.

Unfortunately, this happy issue is not always realized. The filtering power of the already over-taxed gland is overcome, and the great lymphatic channel is flooded with the escaping bacteria. They are poured into the venous circulation, and find their way directly into the lungs. Here capillary embolism results a second time, and with the presence of a parasite which is capable of producing a destructive inflammation. This is the pneumonia which Murchison

says "rarely appears before the third or fourth week," and then "may terminate in small abscesses, or, rarely, in gangrene" (p. 557). It must not be supposed that the presence of the pus-microbe is the only essential to the formation of destructive inflammation, or that, even in tissues the vitality of which is so much reduced by disease as the lungs in the third week of typhoid, they would invariably set up the suppurative process. The investigations of DeBary and Grawitz lead us to think that the resistance of the tissues is a much more important and powerful factor than we had supposed. But not all, if even a small part, of the bacteria are arrested in the capillaries of the lungs. Many of the emboli here are, no doubt, taken up by the pulmonary lymphatics and carried to the mediastinal glands, to be destroyed. Enlargement of these glands is frequent, and their breaking down into abscess is occasionally noticed.

Upon the arterial side of the circulation, the resistance of the tissues is, upon the whole, better preserved; but infection of bones, joints, and other serous cavities, and of the large organs of the body does take place. Then all the severe symptoms of osteomyelitis, suppurating synovitis, pericarditis, pleurisy, peritonitis, meningitis, and abscess in the large organs are added to the typhoid history. It is no wonder that the patient, already reduced by weeks of disease, is unable to resist this unexpected invasion, and very soon succumbs. These complications make up a very considerable bulk of the fatalities from abdominal typhus, though each in itself is rarely met with.

There are cases in which it seems that the bacteria of suppuration circulate in the blood freely until they are arrested by the arterial capillaries, and are then removed by the lymphatic apparatus. It is only in this way that we can account for the disappearance of bacteria experimentally injected into the arterial side of the circulation. For a time they are found in the blood, but in a few days no trace of them can be found by means of cultures. Sometimes, however, when there has been nothing to indicate that the tributary parts have been occupied by infection, the centrally located lymphatic glands swell up, and even undergo a destructive inflammation from the arrested pathogenic microbes. In the sequelæ of typhoid, adenitis is noticed by all systematic authors. By some it has been considered a favorable symptom (Chomel), while others have scarcely ever seen a case recover in which it had occurred. Of all the packets of glands it seems that those of the axilla are most frequently the seat of this form of secondary suppuration. One case is reported in which suppuration, beginning in the axilla, extended to the elbow, and into the thorax, and produced death by perforating the axillary vein. The patient died of uncontrollable venous hæmorrhage. In a case which came under my own observation this secondary infection of the axillary glands produced symptoms which resembled a relapse in the typhoid.

"Miss A., age 20, had been ten days convalescent from a very severe typhoid. Her temperature had been high, requiring the vigorous use of antipyretics. Upon the thirty-ninth day of her sickness, and the fourth day on which her evening temperature was normal, she began to eat solid food. Two days later the evening temperature went up to 100° Fahr. and continued to rise about a degree higher every night, until on the forty-seventh day of the sickness it was 103°. The physician who had attended her being taken sick at this time, I was called to the case. I found the patient very much emaciated. The abdomen was not tender or tympanitic. The stools were well digested and solid. The tongue was not dry and black, but lightly coated. There was ravenous hunger, and dreams of food disturbed sleep. The patient had been put back on a milk diet as soon as the temperature had declared itself. There was a poultice in the

right axilla. The glands of the axilla were severally enlarged to an inch or more in diameter. One of the more superficial ones was discharging a small amount of pus through a follicle of the skin.

"Thinking that the condition of the axilla was a sufficient cause for the return of the temperature, I restored the more nutritious diet, removed the poultice and had the axilla shaved and covered with a wet carbolized dressing. On the following day, with the help of Dr. H. H. Frothingham, I anæsthetized the patient with chloroform and extirpated the glands of the axilla. The result is shown in the chart which I present. It was kept by the nurse. Although I failed to secure a perfectly aseptic wound, the temperature fell in four days to the normal, and the patient made an uninterrupted recovery."

Thus far we have considered the infection of a typhoid with the pus-microbe, the balance of power being, upon the whole, all the time on the side of the host. This condition of affairs can not always be maintained. The tissues of the body are all more and more impaired in the continuance of the disease, and, at last, a time comes when the invasion of the coccus is unresisted. Abscess formation takes place in all parts of the body. These foci may not reach a great size before death terminates their progress. This is especially the case in the abscesses of the brain, which Popoff has shown are almost always miliary and multiples. But besides the multiplication of the bacteria in definite localities, it may take place in the circulating blood itself. A small thrombus forms about the microbe, or a phragocite fails to devour its prey, and itself becomes food for the conqueror. In these ways the bacteria vegetate and multiply in the blood and lymph. The patient is in a state clinically termed septicæmia. This is, perhaps, the condition into which all cases of pyæmia ultimately verge.

But the disasters which the pus-microbe may precipitate upon the typhoid are not yet all rehearsed. At the first point of attack the destruction may be so great as to involve all the coats of the intestine, and perforation take place. In this way the largest serous cavity of the body is at once hopelessly infected, and fatal issue is not long delayed. Sometimes adhesions take place in advance of the destruction, and the perforation may be into a connective-tissue space about the cæcum, or into one of the large organs, or into another intestine. When the destruction involves a large blood-vessel in which an anticipating adhesive inflammation has not taken place, hæmorrhage may result, which, at once, or after many repetitions, may lead to dissolution. There is reason to think, however, that this is not the only cause of intestinal hæmorrhage in typhoid. When the eroded vessel is a vein, the septic bacteria may be carried into the portal circulation, and set up suppuration in the liver. In this way abscess of the liver may arise rather early in the disease, and before general pyæmia appears.

When the low state of nutrition of all tissues has reduced the resisting power to a minimum, infection may take place in any part of the body where germs are present. It is in this way that old scars open, from the germination of lasting spores, and old bone-disease lights up again. The secreting glands of the body may be invaded by way of their ducts. Suppuration of the parotid is not infrequent, and some cases of suppuration of the gall-apparatus without abscess of the liver are explainable only in this way.

Through the Eustachian tube the middle ear is invaded, and extension may go on into the brain, resulting in abscess or meningitis. In the same manner the sexual tract may offer a way to invasion, and orchitis, ovaritis and peritonitis supervene. Slight traumatisms result in defects of the skin, which immediately become the seat of protracted suppuration or other forms of infection.

It is probable that through the constant

picking a way is made for infection with erysipelas, which so frequently appears about the nose and lips of typhoids. Tetanus also may make its way through the abraded skin or intestinal mucous membrane.

That a specific infection is the cause of the disease which Ceci terms hæmorrhagic infiltration, is now well demonstrated. This is the secondary infection which causes the uncontrollable epistaxis in diphtheria. There can be no doubt that the same form of infection is responsible not only for the epistaxis of typhoid, but, also, for a great many cases of diffuse intestinal hæmorrhages and hæmorrhages from the stomach and colon.

Noma, malignant œdema, and diphtheria present no anomalies in their appearance in typhoid.

There is a form of infection to which the poor typhoid is exposed which is the most pitiable of all. Either from the presence of the lasting spores of the bacillus, or from infection through the milk and other food, or through the inspired air, tuberculosis is a very frequent sequela of typhoid. All systematic writers notice this frequency, and attribute it to the protracted depression of the disease. Murchison says that it is more common after typhoid than after typhus, and that it is to be feared in all cases when hectic fever and bronchitis persist after the end of the fourth week (p. 558). Louis records four cases of section in which the lungs were found studded with recent tubercle. The frequency of tuberculosis and typhoid in Ireland has led Kennedy to suspect some essential relation between them. There is no doubt that the low state of vitality to which the patient is usually reduced and the slow convalescence give the latent spores in old glandular foci or in the cicatrices of the lungs an opportunity to vegetate again, and at the same time offer easy access to more virulent bacilli from tubercular nurses, or patients, or food.

It is to be regretted that no extensive and systematic study of the complications of typhoid have been clinically made in the light of modern bacteriological research. The use of cultures from aspirated products in the course of typhoid has been only just begun. Such researches carried on diligently for a few years would throw great light on many dark corners of symptomatology and pathology. So far we can only say that the work done allows us to reach theoretically and provisionally the following practical conclusions:

The local effects of an invasion with the typhoid bacillus is a non-destructive one, and the tendency is toward complete restitution to a state of health.

The primary lesion in the bowel or in the larynx gives rise to a point of least resistance; and the general impairment of nutrition renders all those causes which ordinarily determine the localization of infection far more potent.

Pyogenic and other forms of infection do take place through the primary lesion, and result in more than ordinarily serious consequences on account of the diminished resistance of all the tissues of the body.

Therefore all traumatism to the abdomen, either external, through violent, carless, or unnecessary palpation, or internal, through the use of food containing solid particles which might cause abrasion, should be strenuously avoided.

The imminent danger of typhoids to tuberculosis is conceded by all, and every precaution should be taken to prevent infection through contact with phthisical patients or nurses, or through confinement in rooms occupied by them, or through utensils or food which might furnish the infection; and when there is reason to suspect latent tuberculosis, the use of all anti-tubercular measures is recommended.

The treatment of typhoids and phthisical patients in the same hospital ward is little short of criminal, and the employment of tubercular nurses, attendants, or cooks, or ward-servants is incompatible with the

present state of our knowledge of tubercular ætiology.

As typhoids are more than ordinarily susceptible to all contagious diseases, they should be rigorously excluded from direct and indirect contact with diphtheria, erysipelas, and all wound diseases; the most thorough cleanliness should be observed about their person, and the towels, bedding, and utensils should be beyond reproach.

In the care of the lips, the tongue, and the nose, care should be taken that no abrasions be made which might open a way to secondary invasion.

So-called relapses are often due to a secondary mixed infection. Therefore, in all cases of relapse, careful, diligent, and, if necessary, repeated search should be made for foci or infection which could give rise to the symptoms of relapse or any anomaly of temperature.

When a localization of infection has been discovered, the fact that the patient is, or has been, suffering from typhoid does not interdict the employment of ordinary surgical principles, but furnishes an additional and imperative indication for speedy operative interference, as furnishing the only known means of preventing the most disastrous issue.

NOTES AND LITERATURE.

It is unnecessary to refer to the literature of typhoid from a bacterial standpoint. The battle between mysticism and materialism was fought on the field of Anthrax and Tuberculosis before the real study of typhoid began. The difficulties in staining and in obtaining pure cultures of this microbe retarded its advance into the place it now occupies as the prime ætiological factor of abdominal typhus. Every modern text book on medicine or pathology gives a sufficient history and bibliography of this phase of the disease. The last German edition of Ziegler's Pathology, Klebs' Algemeine Pathologie, and Baumgarten's Lehrbuch der Pathologischen Mykologie are especially recommended.

Gottstein says that the complications of typhoid are not caused by the typhoid bacillus, but by the various pus-microbes. The importance of these complications may be inferred from the space devoted to their consideration by the systematic writers and in the current literature. More than ten quarto pages are devoted to the articles on this subject alone in the Catalogue of the Library of the Surgeon-General's Office. No statistics are available to show the fatality of the complications as compared with the pure disease. Baumgarten (l. c., p. 526) makes the remarkable statement that, under proper treatment, ninety-five or more per centum of typhoids recover.

The fact that the typhoid bacillus does not produce suppuration or other destructive lesion is so well established by numerous observers that the anomalous observation of an encysted suppurative peritonitis by Frankel (Centralb. f. Bact. u. Parask., 1887, I., p. 546) must wait further explanation. He found only the typhoid bacillus in the pus from this peritonitis, which occurred long after convalescence from a typhoid had been established. Baumgarten thinks the pyogenic bacteria had died at the time of the observation (p. 524). Seitz (Bacteriligische Studien sur Typhus Ætiologie, 1886) finds that this bacillus is not pyogenic in animals, although pathogenic in some. Mafucci (Centralb. f. Bact. u. Parastk., 1887, I., p. 149) concludes from experiments on animals that the bacteria are eliminated through the excretory and secretory glands without any destruction to their epithelium or the capillaries.

The most valuable information has been obtained from the following works:

Murchison: A Treatise on the Continued Fevers of Great Britain. Third edition. London. 1884.

Liebermeister: In the Cyclopedia of the Practice of Medicine, von Ziemsen's. American Translation. New York. 1874. Vol. I.

Seitz, Dr. Franz: Der Abdominalty-

phus nach langjaehriger Beobachtung. Stuttgart. 1888.

Gottstein: Die Verwerthung der Bacterologie in der klinischen Diagnostik. Berlin. 1887.

DeBary and Grawitz: Ref. Centralb. f. Bact. u. Parastknd. 1887.

Dunin: Ueber die Ursache eiteriger Entzündungen und Venenthrombosen im Verlauf des Abdominaltyphus. Deut. Arch. f. klin. Med., XXXIX, pp. 369–392.

In an epidemic of typhoid in which complications were numerous, he made many examinations and cultures from the suppurative products, and found, in all cases, the pyogenic microbe. While his method leaves much to be desired, it is a very complete demonstration of the true cause of these accidents which had been previously only conjectured.

Metschinkoff: Phragocitic microbes in the relapses of Typhoid Fever. Virchow's Archive, Vol. 105–109, 1887–88.

W. H. Thompson: Diphteritic Paralysis. *Medical News*, June 9, 1888, p. 630.

Condition of the Mesenteric Glands.—Before any secondary infection has taken place, they are enlarged and filled with the typhoid-bacillus, which is never found within the cell elements (Klebs, Baumgarten, and Liebermeister). In a few cases post-mortem examination has discovered the suppuration of these glands resulting in large abscesses, but there is abundant evidence that perforation does frequently take place in an intestine and recovery follow. Such is probably the explanation of the case of a late interne at the Cook County Hospital, who began to suffer a relapse two or three months after typhoid. Besides the peculiar renal and cerebral symptoms which he suffered, his temperature was not characteristic of typhoid, and, at last, a considerable amount of pus was discharged from the bowels. This was occasionally repeated after exacerbation of the symptoms throughout the course of a year or more.

Jenner (*Medical Times*, Vol. XX) records a case where perforation into the peritoneum followed suppuration of a mesenteric gland.

Andral (*Clinique Medical*, Paris, 1834, I, p. 599) observed the correspondence between the degree of ulceration in the intestinal (Peyer's) lymphatics and the engorgement of the mesenteric glands, and says that MM. Petit and Serres have compared this engorgement to that which follows in the crural and axillary glands in infection in the area tributary to them.

The Lungs.—Although the infection of the typhoid bacillus produces a pneumonia, it invariably tends to speedy recovery, and is observed only early in the disease. When, however, the secondary infection appears, the symptoms are of a much graver character, depending on the destructive power of the pyogenic infection.

Liebermeister (p. 172) calls attention to the fact that severe and fatal embolic pneumonia occurred in Bâsle when the hospital was overcrowded and in bad condition. This symptom disappeared when these defects were corrected.

This secondary pneumonia is ætiologically a unit, whether it appears as abscess, or gangrene, or suppurative bronchitis, and each may or may not be accompanied by suppurative pleuritis.

As we should expect, this disease appears about the third or fourth week. The lungs and the pleural cavity may become infected with putrid and gas-forming bacteria through the inspired air. (See a case by Witkowski, Virch. and Hirsch, *Jahresbericht*, 1872, II, p. 239, and Delafield, *N. Y. Medical Record*, 18—(?)

Pleurisy is not infrequent (Liebermeister, p. 173). It was observed in sixty-four out of 1,743 cases at Bâsle, of which twenty-one came to section.

Infection of Glands by Way of Their Ducts.—All authors mention the frequent occurrence of parotitis, often in the course of a general pyæmia, but more often as the only evidence of infection. Careful study of parotitis, as it occurs in other conditions, leads me to think that the infection

by way of the duct is not the rule. Stephen Paget (*Lancet*, 1886) attempts to establish some relation between the pelvic organs and the parotid gland. He remarks that parotitis is frequently the only secondary lesion to injury or operation upon the pelvis. He has collected sixty cases, including ten of Goodall's, only a few of which manifested any symptoms of pyæmia. I am inclined to think that the determination of infection in the parotid gland will be found to depend on some histological or physiological peculiarity of the gland, inviting the formation of thrombi.

Suppuration of the gall-apparatus is certainly occasionally noticed post-mortem, but oftener symptoms referable to inflammation of the common duct are recognized during life. Both of these conditions are dependent on the invasion of some form of bacteria, either alone or assisted by protozoa, during the depression of the typhoid disease.

In a few instances the pancreas has been found inflamed. In no case do I find that suppuration has been actually observed. There does not seem to be any reason why it should not occur (Andral).

Other small glands may become infected in the same manner. The middle ear thus becomes the seat of suppuration through the invasion, by way of the Eustachian tube (Seitz, 85).

This inflammation may invade the temporal bone, and suppurative meningitis or abscess of the brain result (Murchison, p. 561).

JOINTS AND OTHER SEROUS CAVITIES.—A concise statement of the ætiology and clinical appearances of joint diseases in the course of convalescence of the acute infectious diseases, is given by Max Schueller (Die Pathologie und Therapie der Gelenkentzündungen, Wein u. Leipzig, 1887), with a full account of the literature. The large joints are most affected. Usually the invasion takes place late (19th to 60th day) in the disease. It is certainly rare, as in 3,130 cases in Vienna, Guttenbock found only two complicated by joint disease (Arch. f. klin. Chir., XVI, p. 61). Barwell (Diseases of the Joints, N. Y., 1881, p. 79) says that he has observed a large number of cases of this rare disease. He notices a painless mono-articular variety, and a painful poly-articular variety. If this is really the case, it does not seem difficult to account for the difference. The former is probably a tubercular or attenuated pyogenic infection, while the latter is a more destructive and virulent form. Murchison considers joint affection a sign of a fatal termination of the typhoid disease. Langenbeck (Akiurgie, p. 155) says that suppuration of the knee-joint as a complication of typhoid is an indication for resection, and Hager (Deut. Zeitschr. f. Chir., XXVII, p. 155) mentions two cases treated by antiseptic irrigation of the joint.

The bursæ in various parts of the body are only rarely mentioned as the seat of secondary invasion. I can find no case where it was not a part of a general pyæmia. There is no doubt that it does occasionally occur separately, but is then not considered of enough account to require mention.

Pleurisy, pericarditis, and peritonitis are more frequently mentioned than meningitis, but no one of them is often found as the only locus of infection.

BONES AND THE LARGE ORGANS OF THE BODY.—Cases of bone disease originating in the course of typhoid are mentioned by all authors. Murchison (p. 584) has observed in his own practice two cases of disease of the tibia, one of the femur, one of the temporal bone, and two of the lower jaw.

Old bone diseases frequently break out during typhoid, and scars that have been long healed open spontaneously and suppurate (Liebermeister, p. 146). These phenomena may be due to the germination of lasting spores, or to the localization of infection in the non-resisting scar. The same thing occurs in the pelvic cellular tissue (Zeigler, l. c., II, p. 894).

Abscess of the liver is a very common

and fatal complication of typhoid (all authors). Two forms are to be considered: One, the result of infection through the portal circulation, appears early (7th to 11th day) in the disease, and is followed by pyæmia, or. especially, embolic pneumonia, and the other, due to arterial capillary thrombosis or embolism, appears as late as the third or fourth week, or long after convalescence has been established. Bender (*Lancet*, Oct., 1874) and Burger (Arch. f. klin. Med., XII, p. 623) have recorded cases of the former, and many authors of the latter (Murchison, Liebermeister etc.)

Abcesses of the brain are not very rare, though they do not often attain any great size (Gowers, Diseases of the Nervous System, 1888, p. 1215). They are mostly miliary and very numerous (Popoff, Virch., Arch., Bd. 87). One of the first operations for abscess of the brain is reported by Heineke (Die chirurgisch. Krankheit des Kopfes, p. 99). It occurred after a typhoid, and is supposed to have ended in recovery.

Suppuration of the thyroid is of unusual frequency. It occurred six times in 1,700 cases of typhoid (Liebermeister, p. 174). This frequency can hardly be accounted for by the size of the gland, and must depend on some anatomical peculiarity.

Infection of the bronchial and mediastinal glands by way of the larynx is of rather rare occurrence, but of a very fatal character. It is accompanied by œdema of the glottis, and often extensive destruction of cartilage (Seitz, pp. 85, 86). Murchison (p. 558) says that it appears to be very common in Germany.

All authors agree that bubo is more frequent after typhoid in the axilla than in the groin or in other packets of glands. This can, perhaps, be accounted for by supposing infection of the fingers and hands to take place from the mouth by biting the nails and picking the lips and teeth. In the Library of the Surgeon-General's Office, are three monographs on Axillary Phlegmons.

Hæmorrhagic Infection (Ceci).—In diphtheria the unfavorable significance of repeated hæmorrhages from the nose has long been recognized by all clinicians. It has been shown by Klebs (p. 199) to be due to a secondary specific infection which he asserts is often the cause of epistaxis in typhoid. The same form of infection has been noticed in other localities. Frequently an intercellular hæmorrhage has been observed in the new-born which has been attributed heretofore to the "hæmorrhagic diathesis." Ritter has demonstrated it to be due to hæmhorrhagic infection through the umbilical wound. That the intestinal hæmorrhages of typhoid are due to the same specific microbe has not, so far as I know, been proved by cultures. Seitz (Case 51, p. 185) gives an account of a case in which severe pain in the stomach in the third week was followed by repeated gastric hæmhorrhages. Murchison (p. 530) mentions a case in which intestinal hæmorrhage took place from diffuse spongy patches of excrescences firmly attached to the intestinal wall. The mesenteric glands and the spleen were enlarged. When hæmorrhage occurs in many places besides the bowel, the typhoid has been clinically termed "hæmorrhagic putrid fever" (M., p. 527). Out of 107 cases of epistaxis mentioned by Liebermeister (p. 175), fourteen cases were accompanied by hæmorrhage from other parts of the body, especially from the bowels. It usually occurs in young people, who are known to suffer most frequently from hæmorrhagic infection in other diseases. The appearance of the hæmorrhagic infection is sometimes alarmingly rapid. Ruggein (Virch. & Hirsch's Jahresberischt, 1872, II, p. 237), records such a case. An eighteen-year-old man was suffering a rather mild course of typhoid, when in the second week he was prostrated by an intestinal hæmorrhage accompanied by hæmhorrhages from every observable surface of the body. All the secretions and excretions were bloody. Nevertheless convalescense began in the fifth week.

GAS-FORMING BACILLI (MALIGNANT ŒDEMA).—Although emphysema is frequently the result of an ulceration and perforation in those parts of the respiratory apparatus from which the atmospheric pressure is removed in inspiration (Murchison, p. 557) there are cases in which a secondary infection with a gas-producing bacillus is perfectly demonstrated.

Such an infection was observed by Meigs (*Philadelphia Medical Times*, Oct. 5, 1872), in which the liver was emphysematous throughout before death, and the case came to post mortem on the fourteenth day.

DIPHTHERIA.—Murchison (pp. 558–588) mentions three cases by Louis, two by Forget, and six by Rilliet and Barthey, and one of his own observation. In this case diphtheria appeared on the thirtieth day, and a local infection of the pus-microbe produced a post-coracoid abscess. Other illustrations are not wanting in the literature.

NOMA.—This has been observed by most systematic writers as an extremely rare complication. Murchison has met with it once. Greissinger noticed only one in 600 cases of typhoid. Out of eighty-nine cases of noma observed by Tourdes seven followed typhoid fever. West observed two similar cases. (See Murchison and Liebermeister.)

ERYSIPELAS.—This usually appears in an advanced stage of the disease (Murchison, p. 582). It appears in about 1 per centum of all cases. Seitz has rarely seen erysipelas in the early weeks of typhoid, but often in the later weeks or in convalescence (page 104).

TETANUS.—One of the most frequent and fatal of mixed infections in wound diseases is tetanus, which is also occasionally a complication of typhoid. Seitz (Cases 11 and 12, pages 80–83) gives the history of two cases, the result of which indicates that it is not always fatal.

TUBERCULOSIS.—Murchison observes that tuberculosis of the lungs is more common after typhoid than after typhus, and that tubercle ought always to be feared when hectic fever and bronchitis persist after the fourth week. Louis records four cases of fatal typhoid in which the lungs were studded with recent tubercles, and Bartlett observed long ago that consumption is a frequent sequela of this disease. Trouseau (*Union Medicale*, 1859) records cases of tubercular meningitis after typhoid. Harley and Kennedy (Murchison, p. 462) have even considered typhoid and tuberculosis dependent upon the same ætiological factor.

125 STATE STREET.

FOUR CASES OF SURGICAL KIDNEY.

BY I. N. DANFORTH, A. M., M. D.,
Professor of Renal Diseases in The Woman's Medical College.

CASE I.—On the 18th of February, 1879, I was called to see Mrs. I., an Irish woman, aged thirty-eight, married, but without having borne children. She was sitting upon her bed, propped up by pillows, and partly supporting the weight of the upper half of the body upon her clenched fists. Her room was without a window; the atmosphere was saturated with the odor derived from a dirty kerosene lamp and from the exhalations from a livery stable immediately under her. Her face was pinched with agony, and as I entered the dark and fœtid room, she had a paroxysm of hysterical weeping. She soon regained her composure, however, and I then elicited the following history of her case: About five years prior to my visit, while under an unusual strain of hard work in a restaurant, she contracted acute cystitis, and suffered the usual symptoms, namely, incontinence, dysuria, hæmaturia, etc. After trying various domestic remedies and patent nostrums, she called in a practitioner of the "irregular" sort, who promised her a speedy cure. His treatment was both general and local, the latter being vigorous, to say the least. It was as follows: Introducing a steel sound into the bladder, he attached one pole of a galvanic battery thereto, while the other pole was placed over

the bladder just above the pubes He then passed a current through her bladder for nearly half an hour. The effect was intense pain, with cystic tenesmus, hæmaturia, and immediate intensification of all her symptoms. From that time until I saw her, she was treated by various practitioners, and by every local and general means which the books suggested or ingenuity could devise. Nevertheless, in spite of treatment, or in consequence of it, she steadily grew worse until she had reached the miserable condition in which I found her. She was thin, pale, and sallow, and very much emaciated. Her digestion was exceedingly poor; her bowels obstinately constipated in spite of the almost constant pelvic tenesmus, and she was troubled with frequent attacks of nausea and vomiting. Between trying to urinate and trying to resist urination, she was kept busy night and day, so that she got scarcely any restful sleep. Her urine was rather scanty, intensely alkaline, strongly ammoniacal, and emitted a very offensive odor. It was heavily loaded with pus, phosphates, and sodic urate; it also contained a little albumen, and a large amount of mucus. The microscope showed pus-corpuscles in every stage of growth and decay, epithelial cells in large numbers from all parts of the urinary tract, considerable amorphous granular matter, a few large short casts from the straight tubes, much eroded from maceration in alkaline urine, and crystals of the saline constituents already mentioned. At this time I did not suspect any grave lesion of the kidney, and I commenced treating her for chronic cystitis. But in a short time I noticed that while she complained of pain everywhere, it still seemed to focalize in the right lumbar region. I therefore proceeded to make a careful physical examination of that portion of the body, with the following results: The costo-iliac space was tender to pressure, and dull on percussion, and I could map out quite distinctly an irregularly roundish tumor, which seemed to be about twice as large as a normal kidney. There was also some tenderness along the course of the right ureter, and pressure upon both the kidney and the ureter seemed to exasperate the bladder and intensify the desire to urinate. A few days later I learned that there seemed to be an intermittent flow of pus; that when the amount of pus was at its maximum the pain in the right side was complained of the least, but whenever the amount of pus in the urine began to diminish, the pain in the right kidney was increased *pro rata*, and all other symptoms were intensified. I now concluded that the patient had what is known as *intermitting pyonephrosis*, and that the symptoms of the renal lesion had been masked by the much more prominent and urgent symptoms emanating from the bladder. I also concluded that the only promise of permanent relief was by means of an operation upon the diseased kidney. With that end in view, I sent her to St. Luke's Hospital, where (it being a charity case), she passed under the care of my colleague, Professor John E. Owens. We examined the case together, and arrived at the concurrent opinion that an operation was urgently demanded, and decided to operate at once. The operation was accordingly performed by Professor Owens, assisted by Professor Gunn and myself, and in the presence of several other members of the hospital staff.

The initial incision was made along the outer border of the erector spinæ muscle, and extended from the iliac crest to the lower border of the last rib. No difficulty was experienced in reaching the kidney, which upon being exposed was found excavated and occupied by many pus-cavities, so that it was practically a multiple abscess. The surrounding tissues were not very much indurated, and there were no adhesions which rendered ablation of the kidney impracticable. But as the operation of nephrectomy was then somewhat new and untried, at least, among our local surgeons, it was thought best to open the kidney upon its dorsal aspect, irrigate it thoroughly, establish free drainage, and give it the best

chance to repair itself by granulation. At the suggestion of Professor Gunn the renal cavity was packed with crystals of boric acid, after the proper insertion of the drainage-tube. The wound was then brought together with sutures and dressed antiseptically, and was irrigated daily with a five-per-centum solution of carbolic acid. There was a continuous discharge of pus, which at first was thick and grumous, but afterward became laudable. The amount of pus in the urine gradually diminished, until it got to be hardly noticeable. The patient gained strength, increased in weight, and was out of bed within three weeks after the operation. She left the hospital, contrary to the advice of her medical attendants, about six weeks after the operation. At that time the wound had not entirely healed, but was granulating nicely, and bid fair to close up entirely in a few days.

About two weeks after she left the hospital, she very unwillingly went to ride with her husband. They took a long drive on the lake shore, were caught in a violent storm, and she returned home thoroughly exhausted, chilled, and wet to the skin. The following day she was seized with a severe rigor, followed by an accession of fever, scanty urine, which was tinged with blood and loaded with albumen, œdema of the face and lower extremities, and slight indications of coma. In spite of treatment, these symptoms rapidly grew worse, and she died of *acute nephritis* on the fifth or sixth day after the fatal ride.

Necropsy, twenty-four hours after death: Body fairly well nourished; *rigor mortis* fully developed; brain and spinal cord not examined; heart, lungs, and large vessels normal. Liver slightly enlarged, otherwise normal. Stomach and alimentary canal in healthy condition. Uterus and its appendages healthy. The right kidney was shrunken to a mere shell, averaging a little more than a quarter of an inch in thickness; its walls were very irregular, however, measuring in some places more than half an inch in thickness, while in other places nothing was left but the thickened capsule.

There were no pus-pockets found in the organ, but a few small-sized masses of "mortar-like" material, which probably occupied the sites of former pus-cavities. It was impossible to distinguish the different structures of the kidney, but as nearly as we could judge the cortical substance was nearly, or quite, destroyed. The kidney was pretty firmly imbedded in a growth of newly formed connective-tissue, but it could be enucleated without much trouble.

The ureter was funnel shaped, with the mouth of the funnel upward, and was much dilated throughout its full extent; its walls were thickened, and the tube was much longer than normal. Upon laying it open we found several patches of ulceration of its lining membrane. The bladder was very much contracted; indeed it seemed to be in a state of permanent spasm; its cavity would not contain more than two fluid ounces of urine, and even that quantity produced a degree of distension which would have been painful during life. The walls of the bladder were very greatly thickened, the mucous membrane rugose, and the sulci between the corrugations were deeply ulcerated. The urethra was thickened, contracted, puckered into longitudinal folds, and ulcerated.

Upon looking over the history of this case, I am impressed with the idea that it was an exceedingly favorable one for operative treatment, yet the patient died. But the circumstances were mainly against us. In the first place, the operation was not performed as soon as it ought to have been by, perhaps, a couple of years; hence, when it was performed the ureter and bladder were practically destroyed. In the second place, she left the hospital at least two months too soon, and then contracted *acute nephritis* by unwise exposure. I am persuaded that an earlier operation, and perhaps a more radical one, supplemented by absolute control of the patient for a sufficient length of time

afterward, would have resulted in a permanent cure. In fact the immediate results of the operation were all that could be expected, and the patient was slowly approaching perfect recovery when she encountered the undue exposure which induced her fatal illness.

CASE II.—On the 8th of July, 1885, I was called to see M. W. P. in consultation with Dr. Dewey, his attending physician. The patient was a remarkably well developed and athletic young man, a lawyer, aged 29. He had always been healthy and strong, and much given to athletic sports. During his college days he frequently engaged in gymnastic exercises, and was the champion athlete of his class. He took particular delight in the "spring-bar" exercise, which calls for violent efforts on the part of the lumbar and dorsal muscles, as well as those of the upper extremities. During one of his periods of exercise, he felt a sudden "strain" in the right lumbar region, more especially in the costo-iliac space. Shortly after, he began to have paroxysmal attacks of pain in this region, not very violent or frequent at first, but gradually increasing in both violence and frequency. He had experienced two or three attacks of great severity, so that on each occasion he was obliged to abandon business and take to his bed. At the time of my visit, he had just returned from a journey of three or four hundred miles. He was attacked while away and was in constant pain on the homeward journey, and went from the sleeping-car to his bed. I found him with a temperature varying from 99° to 101° Fahr. from day to day, with a clammy tongue, impaired appetite, constipated bowels, and with a well-defined area of tenderness over the region of the right kidney, where he also suffered a nearly constant, dull, heavy pain. I failed to detect any tumefaction of the kidney by palpation or percussion, but bimanual pressure (by grasping the loin between the two hands) developed an area of well-defined tenderness. At this time no fluctuation could be detected. I examined the urine with the following results: Specific gravity, 1.018; reaction slightly acid; albumen, a slight cloud, hardly enough for volumetric measurment; sugar, none. The urine was cloudy with mucus, and rather paler than natural. The microscope showed renal and pelvic epithelia in large numbers, isolated and in patches, especially the linear patches or cylinders from the papillary portions of the straight tubes so common in inflammation of the renal pelvis. I also found a great number of pus-corpuscles, some granular matter, but no tube-casts. I concluded that the case was one of suppurating kidney (pyonephrosis), and that the prognosis was grave. I also stated to the attending physician that an operation would be required. About the middle of August fluctuation became quite distinct over the right kidney, and about two fluid ounces of thick, malodorous pus was withdrawn by the aspirator. From this time forward, the patient's condition grew steadily worse; the pain increased; the appetite failed; the tongue became heavily coated; he lost flesh rapidly; night-sweats occurred; the area of tenderness extended, and the whole aspect of the case was discouraging and alarming. Meantime the patient had been treated according to the varying indications, but without any successful results. Having made up my own mind that an operation was unavoidable, I asked that Professor John E. Owens be called in consultation, which was done on September 16. Professor Owens fully agreed with me as to the necessity for prompt operative measures. Accordingly, on the 22d of September, I operated, with the assistance of Professor Owens, Dr. Frank Cary, Dr. Dewey, and Dr. J. H. Bartlett. The line of incision was nearly vertical, along the outer border of the erector spinæ muscle; the kidney was reached without dificulty, and was found firmly united by adhesions to the peri-renal tissues, the latter being much condensed and indurated. The renal cortex was thinned by prolonged suppuration

—in fact, at the point where my dissection reached it, it was but a mere shell of condensed cortical tissue. Upon incising the kidney, there was an escape of thick fœtid pus, perhaps half an ounce in quantity. A free incision was now made through the cortex with a blunt bistoury, using the index finger as a guide. There was but little hæmorrhage, except from a single vessel, but that was easily found and tied. Upon exploring the interior of the kidney with the finger, I found that it was practically *a multiple abscess;* it was beset with pus-pockets in all directions, and these pockets were filled with thick pus, containing gritty masses of urinary salts, and the so-called "mortar-like" matter of Roberts. These cavities I freely opened by perforating them with the finger, and the result was one large ragged cavity in place of many small ones. This cavity was now thoroughly irrigated with a carbolic-acid solution, a large drainage-tube introduced, the wound packed with iodoform-gauze and brought together with deep sutures, except at the lower angle, whence the drainage-tube issued. The patient rallied promptly, and progressed rapidly toward recovery.

The subsequent history of the case is but a simple story of recovery without any untoward incidents.

The temperature never rose above 101.5° Fahr.; the wound healed kindly; the urine was slightly bloody for a few days after the operation, after which it rapidly improved as regards pus and other pathological products; the patient regained his digestion and recovered his strength, and on the 21st of December, following the operation, he went to a distant city to pass the remainder of the winter. On the 20th of April, 1886, he called upon me, having just returned home. He presented the appearance of stalwart health, but complained of some lameness at the seat of the operation, especially if he attempted much muscular exercise. The urine was of normal specific gravity and reaction, but contained a trifle of albumen. There was considerable whitish deposit, consisting of renal, pelvic, and cystic epithelia, leucocytes, mucin casts, and some granular matter, but I found no fibrinous or hyaline casts. These symptoms slowly disappeared; he resumed his business gradually and continuously, and at the present time seems to be in perfect health, the albumen having long been absent from the urine, and the urinary sediment being scarcely noticeable.

Case III.—On the 18th of December, 1886, I was called in consultation by Professor J. H. Salisbury, M. D., to visit Mrs. H., an intelligent lady, who gave me the following history of herself. Her age was forty years; she was married, but had no children; she was a native of this country, and her life had been spent in the ordinary duties of a housewife. Eighteen years prior to my visit the patient had been thrown from a buggy, the seat of which fell upon her right side, fracturing the two lower right ribs. There was intense pain at the seat of injury, but no hæmaturia or other indications of renal injury. In due time there seemed to be complete recovery and entire relief from pain. About seven years after the accident Mrs. H. had a severe attack of pain in the right side, coming on suddenly. The pain was very intense, and required the administration of an anodyne for its relief. This attack was followed by others, occuring once in two or three months, but gradually becoming more frequent and severe. She always located the pain in the right ilio-costal space, and it was accompanied by great tenderness on pressure. With, or, more correctly, following, each attack, there was a partial paresis of the right side, so that locomotion was dificult and painful, and there was a sense of numbness perceptible in the whole right side, including the right half of the tongue. During the paroxysms, respiration was impeded, and sometimes was very difficult and painful. For the past four years these attacks occurred more frequently, and increased in severity and duration, so that her health had been seri-

ously impaired by exhaustion and suffering. They were accompanied, during this latter period, by frequent and sometimes painful urination, and by other sypmtoms of irritable bladder. The urine had long been loaded with pus to such an extent that half a pint of it has been passed with the urine in thirty-six hours. But during the attacks of ilio-costal pain, the pus had either disappeared or diminished to an insignificant quantity, the pain continuing and increasing in severity, and the urine remaining clear until she would suddenly feel something "give way" in her side, the pain would quickly leave, and pus in great quantity would re-appear in the urine. For some hours after the subsidence of the pain, she would experience frequent and urgent calls to urinate, and the fluid evacuated would consist largely of pus. This was the history of the case down to the time I was called by Professor Salisbury, namely, December 18, 1886.

At my first visit I found the patient in bed, in the midst of one of her attacks. She complained of constant heavy, dull pain in the right renal region. Her temperature varied from one to two degrees above normal. She had little appetite, and her digestion was imperfect; she had constipation, followed frequently by diarrhœa; the flow of urine was rather small, but at that time did not seem particularly abnormal to the naked eye. The microscope showed a few pus-corpuscles, epithelia, also, from the kidney and bladder, but no tube-casts. The urine also contained a very small amount of albumen, and an excess of phosphatic salts. Upon examining the patient I found a very distinct tumor in the right ilio-costal space, which extended from the iliac crest to above the level of the last rib, and latterly it extended nearly to the median line. It was tender to the touch, seemed to be rather indistinctly lobulated, gave distinct evidences of fluctuation over a portion of its area, and within certain limits was easily movable. I concluded it was a cystic kidney of the "intermitting" type; that it was much injured by the encroachment of the process of suppuration, and that an operation would be required before any substantial relief could be expected, and this opinion was fully concurred in by Professor Salisbury. A few days after, the accustomed gush of pus came, she was speedily relieved of the constant dull pain, whilst the size of the tumor had diminished.

The patient and her friends finally consented to an operation, and on the 12th of March she entered St. Luke's Hospital for the purpose of having some radical operation performed.

At that time her condition was as follows: She was cheerful; her digestion was good; bowels regular; her sleep was refreshing, and temperature was not above 99.4° Fahr., while the pulse ranged from 80 to 90. She was somewhat emaciated, looked anæmic. Her nervous system was somewhat shattered by the long-continued exhaustion by pain and suppuration. Examination of the urine after her admission into the hospital showed the following results: Specific gravity 1.020; reaction intensely alkaline, so that it took 17 minims of acetic acid (of the U. S. P.) to acidulate ten fluid drachms of urine. The urine remained turbid after filtering from presence of mucus there was a slight amount of albumen present, perhaps a little more than the pus accounted for. The microscope showed crystals of urates of soda and triple phosphates in large amount, disorganized pus-corpuscles in great numbers, and epithelia of the bladder, pelvis of the kidney, and collecting tubes; no tube-casts were found. The tumor in the right ilio-costal space was quite prominent, very easily defined, and somewhat tender upon pressure. Two or three days after her admission, I requested my colleague, Professor John E. Owens, to examine her with me. Upon comparison of our views we fully agreed that an immediate operation was necessary. Accordingly, on the afternoon of the 19th of March, assisted by Professor

Owens, Dr. Frank Cary, Professor Salisbury, Dr. L. B. Hayman, and the house staff, I operated, as follows: An incision was made reaching from the crest of the ilium to the lower rib, a very little to the right of the erector spinæ muscle. The dissection was continued layer by layer until the kidney was reached; it was found surrounded by fatty tissue, which was torn apart by dressing forceps and the fingers. The pelvis of the kidney was found fully distended and the whole organ much enlarged, but there were no adhesions, nor any indications of renal calculi. The organ did not seem to be so much damaged as we expected to find it, and the lesion was mostly located in the pelvic and medullary portion of the kidney, leaving the cortex comparatively unharmed. We therefore thought it best not to attempt the removal of the kidney, but to open the pelvis, irrigate the cavity, and establish drainage, which was accordingly done. An incision about two inches in length was made in the pelvis, the cavity was evacuated of its pus and putty-like matter; the kidney was explored by the finger, but no pus-pockets were found; a drainage-tube was inserted and stitched into the pelvis of the kidney with catgut. The lumbar fascia was next closed by continuous suture of catgut, and the wound then brought together by deep sutures. Reaction came on slowly, but without any bad symptoms, and the patient passed a comfortable night following the operation. For the next few days the current history showed that the patient was restless, nervous, had considerable pain, and required anodynes hypodermically quite frequently, yet she took a good allowance of nourishment, passed a normal amount of urine, and her temperature never rose above 102.2°. The wound was irrigated daily with carbolized water, and the reparative process went on without any difficulty. The urine passed freely through the drainage-tube, but the amount gradually lessened, until after three or four weeks but very little passed that way. The condition of the urine steadily improved, the pus diminishing, the alkalinity lessening, until on the 4th of April, I find the following note: "Urine, specific gravity 1.020; reaction, acid; no albumen; very little sediment." Four weeks after the operation the drainage-tube was removed for the first time. The renal extremity was found coated with urinary salts, showing that it had remained in the renal cavity. Its place was supplied by a tube of smaller size, which was now removed and cleansed every day. The fistulous tract closed in a short time firmly and soundly; the external wound healed rapidly and kindly, and the urine improved daily in its appearance, the amount of sediment lessening, the quantity of urine being about normal, and the general condition of the patient improving in every regard. She remained in the hospital until the 1st day of June, gradually improving in health and slowly gaining flesh during this time. At the date last mentioned she was discharged and went into the country where she spent the summer. I did not see her again until about the 1st of March of the present year, when she called upon me. Her condition had changed marvelously; she had gained in flesh and strength and looks now the picture of health. I procured a specimen of the urine and examined it with the following results: Specific gravity, 1.020; reaction, acid; no albumen; no turbidity from the presence of mucus; very little sediment. Examination of the sediment with the microscope showed a few mucous corpuscles and some epithelium from the bladder and kidney. She states that she has occasionally a little dull, deep-seated pain over the region of the kidney, but it is so slight that it causes her no inconvenience, and probably would not be noticed at all if she were not aware of the fact that there had been in that locality a disease of the kidney. The results of the case may therefore be considered satisfactory in every way.

Case IV.—On the 13th of December, 1887, I was called in consultation by my

friend, Dr. J. E. Stubbs, to visit Mr. J. P., a resident of Milwaukee, Wisconsin, but staying at a hotel in this city.

The history of the case was rather meagre, but I was able to obtain the following particulars:

The patient's age was thirty-four years; height, about five feet and eight inches; weight, 155 pounds. He had always been temperate; had never used tobacco to excess, and had never had any venereal diseases. He had lived an active, driving, mercantile life, which involved a great deal of travel and exposure. When he was eleven years old he fell down a rough and precipitous hill-side and received a number of contusions thereby. As a consequence of this he was confined to bed for a few days, and although he remembered being "sore and lame all over," he did not recall any symptoms of renal or urinary trouble. When he was eighteen years old he had "some kind of a fever," but could not tell what. In the autumn of 1883, he was suddenly taken with a severe pain over the right kidney, which followed down the course of the ureter and invaded the urethra and the testicles. He had rigors, a high temperature, persistent pain, and tenderness over the right kidney, and hæmaturia. These symptoms lasted a few days, and confined him to bed, but they gradually improved, and in course of a fortnight he was able to resume his business again. Since that time, however, he has been subject to oft-recurring attacks of pain in the right side, but not of sufficient violence to send him to bed, except possibly on one or two occasions. He had a severe attack of measles last June; the urine was not examined at that time.

He arrived in Chicago three or four days before I saw him. On the morning following his arrival he walked from his hotel nearly a mile to breakfast with some friends. He partook heartily of food, and after some time spent in social intercourse with his friends, started to walk back to his hotel. On his way, he was suddenly seized with a severe paroxysm of pain in the right illio-costal space, so that he was obliged to hail a cab and ride to his hotel. When, two days later, I examined him in conjunction with Dr. Stubbs, I found him with a temperature of 103° Fahr.; pulse 108; dry tongue; thirst and anorexia, and complaining of great pain and tenderness in the right hypochondrium, which extended through the side to the lumbar region. Upon making a physical examination, I found a distinctly rounded tumor, completely filling the right illio-costal space, and extending forward and inward to the median line. The tumor was spherical, quite indistinctly lobulated, tender upon pressure, easily movable within well-defined but narrow limits. Although it was very tense, a distinct feeling of fluctuation could be perceived. It extended upward to the liver, of which it seemed to be a part; below, it reached lower than the crest of the ilium; anteriorly it could be distinctly felt as far as the linea alba, and by making deep pressure fluctuation could be recognized posteriorly at the border of the erector spinæ muscle. Upon examining the urine I found it loaded with pus and alkaline phosphates, and containing a little albumen (about one-fortieth by volume); it was intensely alkaline and offensively ammoniacal, and the patient was plagued by frequent and intense demands to urinate. I at once concluded that the patient was suffering from suppurating kidney, in which opinion Dr. Stubbs concurred. I advised that aspiration be performed at once, and that it be followed by nephrotomy, if the aspirator demonstrated the presence of pus. Unfortunately this advice was not followed, although it was vigorously supported by Dr. Stubbs. The operation was delayed until the patient's friends could correspond with his former medical attendant, who could not believe that the patient was in the condition represented by me, and who accordingly counseled delay and further consultation with Dr. R. G. Bogue, who

was called on the 17th. After a most careful and painstaking examination, Dr. Bogue fully concurred in the opinion that an immediate operation was not only justified, but imperatively demanded. We therefore separated to meet on the following morning, September 19, at ten o'clock. At that time the patient's temperature was 102° Fahr.; pulse 108; skin moist and clammy, and the stomach irritable, a condition which was in marked and unfavorable contrast with that which he presented on the 13th. The patient was removed from his bed to an operating table and etherized. There were present, and assisting me, Drs. R. G. Bogue, J. E. Stubbs, L. B. Hayman, and Mr. Stubbs. After anæsthesia was complete, I introduced an aspirator-needle about midway between the point of the lower rib and the umbilicus, and withdrew nearly a pint of fœtid pus, which materially reduced the size of the tumor, although distinct fluctuation could still be detected. It was therefore evident that a radical operation must be performed, and that if performed, a fatal result was by no means unlikely. But after fully explaining to the patient's friends the prospects and dangers involved, it was decided that the patient was entitled to the chances which an operation promised, in spite of its dangers. I accordingly operated, assisted by Drs. Stubbs, Bogue, and Hayman. The initial incision was made about one inch posterior to the anterior superior spinous process of the ilium, extending horizontally upwards to the lower rib. The succeeding muscular and membranous layers were divided as rapidly as possible, but I was considerably hindered and embarrassed by hæmorrhage from the divided planes of muscle. Upon reaching the tumor it was found to be traversed by large veins, which formed a thick plexus all over its surface; the part exposed was tense and fluctuating, showing that the aspirating needle had not penetrated it. An exploring needle was passed into the tumor, which immediately gave exit to a drop of pus. Fearing hæmorrhage if I made an incision into the kidney with a scalpel, the points of a pair of dressing forceps were thrust into the tumor, and I then enlarged the wound a little by inserting a pair of hæmostatic forceps, and forcibly dilating them; this was followed by the insertion of the tip of the index finger, and then of the entire finger. Lastly, the opening was fully dilated by means of the two thumbs placed together, as in dilating the sphincter ani. There was no hæmorrhage of any account, but a gush of not less than a pint of pus. I proceeded next to explore the cavity which had been emptied, and found the "shell" of a kidney enormously enlarged and dilated, but divided into many compartments by dissepiments of pre-existing connective-tissue, answering to the original division into "pyramids of Malpighi." These partitions I tore away as far as I safely could, so as to leave one large cavity. It was my intention to curette the abscess cavity, but the condition of the patient, and the adverse opinion of Dr. Bogue, led me to abandon that measure. The cavity was therefore freely irrigated with a carbolized solution, a large drainage-tube inserted, antiseptic dressings applied, and the patient put to bed in a greatly exhausted condition. Artificial heat and stimulants were vigorously employed; the patient slowly rallied for a few hours, and then without loss of blood or other appreciable cause, he began to sink, and death followed twenty hours after the operation. An examination of the body was not permitted.

It was a sad misfortune that the patient and his friends would not permit prompt measures. I am strongly of the opinion that had the operation been done at once, as Dr. Stubbs and I advised, the patient would have survived it; but the succeeding four or five days of hectic and vomiting were fearfully exhausting, and the result was just what might be expected.

I would not again attempt to reach the

kidney by the route traversed in this case, not even if I were performing nephrectomy. But for nephrotomy, the lumbar incision, by the side of the erector spinæ muscle, is infinitely preferable for many reasons, which I purpose formulating in a future article.

Lastly, I desire to extend my sincere thanks to Dr. Bogue for his most valuable counsel and assistance.

EDITORIAL.

HIGHER MEDICAL EDUCATION.

The season of the year has come again when the various medical colleges are sending forth their annual announcements, giving a statement of the advantages and the curriculum of each, and their requirements for obtaining the degree of Doctor of Medicine.

It is a gratifying assurance of advancement, for which a large part of the profession has been pleading for years, to see the gradual increase in the number of the older and stronger medical colleges that are requiring evidences of proper mental training for admission to them; that are lengthening the period of study requisite for a degree in medicine; that are increasing their facilities for instruction, and making their examinations more rigid.

The announcements which have come to the *Journal and Examiner* during this season show that some of the more prominent schools to which the profession has been looking to see evidences of their intention to keep pace with the advances that others are making, now show that those institutions are declaring their intentions to do so, immediately or in the near future, and for this they are to be commended.

In the annual address delivered at the last meeting of the Massachusetts State Medical Society, Dr. B. J. Jeffries sought to show how the medical profession has lost some of the position which it held in past times. Extracts from that address appear in another part of this number of the *Journal and Examiner*. Whilst conceding that it is true that never have the opportunities and the facilities for gaining a liberal medical education been so great as at the present time, he believes that the advances made in late years in all walks of life have rendered it incumbent on the physician to make the most of those increased facilities, since more is expected of him.

Without the broad and liberal culture which those facilities can bring, the medical profession must expect to yield some of the position it has held in the learned professions.

That too many had gained access to its ranks who either had not enjoyed those advantages, or who had neglected to avail themselves of them and properly profit by by them, he believed to be one of the causes which have been tending to lower the standing of the whole medical profession in the estimation of the general public. His suggestions for the remedy of this condition, and restoration of the profession to its former proud position, are in accord with the ideas of many others who have been striving to keep our profession in the front in the great advance that this century is witnessing in every phase of life.

The first requisite for this must, of course, be the natural capacity for such work, and the proper discipline of those faculties prior to beginning the study of medicine; then adequate facilities for the right kind of instruction, such as our best colleges now possess, and the prosecution of study, theoretical and clinical, under such circumstances for a sufficient number of years to enable the mind to comprehend the undertaking.

Whilst in an extensive country like ours, with its varying demands upon its physicians, no uniform standard is practicable, yet to maintain the position which all wish to see it hold, the percentage of liberally educated men in it must be large to

secure that dominating influence which alone can keep the standard high.

The *Journal and Examiner* would offer no discouragement to any of those colleges that are earnestly striving to uphold a high standard, and to well qualify young men for their responsible calling, but it would especially commend the efforts of the colleges, whose age and standing make them conspicuous, that are giving evidence of being in sympathy with the demands of the times for the highest standard of medical attainment that is practicable, and to express the desire that the profession at large, whose support is essential for their fruition, show appreciation of those efforts. At least temporary sacrifices attend such struggles for advancement, but by giving proper support to such as maintain the highest standard, others will be encouraged to do likewise.

Dr. Jeffries might have gone still further in accounting for the assumed lowering of the standing of the medical profession, and stated that the medical colleges are not simply teaching bodies, but that they have the power to confer degrees, and that their degree of Doctor of Medicine, with the assurance given in the diploma granted, entitles the holder of it to practice medicine in most of the States and Territories without question. Should a time ever come when the function of a medical college should be exclusively that of teaching, and the licensing power be vested in an entirely distinct body, whose duty it would be to ascertain the qualifications of candidates for a license to practice medicine, a most unwelcome duty would be removed from the faculties of the colleges, who are now forced to reject many candidates for a degree who have been their own pupils. Whilst there are arguments, and forcible ones, on both sides of this question, it seems not improbable that making colleges simply teaching bodies would result in a higher average of medical attainment and thus bring into the medical profession a larger percentage of liberally educated men who would be able to command the confidence and the respect of the world at large and maintain the high standing of the medical profession, whatever might be that of the other professions to which Dr. Jeffries' address alluded.

NEW ANTIPYRETICS, AND PROPRIETARY MEDICINES.

Until the recent great advances in chemistry and pharmacology gave us the revelations of the laboratory, it seemed as if we were not greatly wanting in antipyretics in the physician's armamentarium, ranging from cold baths to venesection. The introduction of antipyrin and antifebrin and other recent antipyretics seems at present to have almost supplanted those on which implicit reliance had been placed. Will their present claims stand the crucial test of time? Will they prove as free from danger, as safe, as they are now believed to be?

Their introduction has raised another question—one regarding proprietary medicines—a question that has not been wholly decided yet by the great body of physicians in this country. Not unnaturally, American manufacturers of proprietary medicines are asking what makes the difference between proprietary medicines manufactured on the two sides of the Atlantic. Shall American physicians prescribe only such as have been manufactured on the eastern side of that great ocean, and, if so, for what reason? The same objection holds good against all to which a name is given which conveys little, if any, idea of the component parts. Only careful analysis can determine whether published formulæ indicate reliably their ingredients, but the same is equally true, in some respects, of many of the alleged officinal preparations.

It must be conceded that many of the manufacturing chemists, at home and abroad, are furnishing us with preparations that are elegant in form, and apparently

quite as reliable in composition as many of the officinal preparations that are dispensed, and having a great advantage in being less unpalatable. If sufficient guaranty can be given the prescriber that he can as safely rely upon the accuracy of the published formulæ of these unofficinal as upon the officinal preparations, it is not improbable that they will in future be prescribed with increasing frequency by a large part of the profession, who believe that the active competition between rival manufacturing chemists and the advance in chemistry and pharmacy, have resulted in the production of many preparations of merit, which until recently were wanting.

It is not essential that the names of any of the well-known manufacturing chemists be cited to illustrate the wide difference which exists between them as manufacturers of proprietary medicines and others who are engaged in concocting the nostrums that are vended and popularly known as patent medicines. Their methods of disposing of their productions differ as widely as their products, and although they seek to protect by legal methods the results of their skill and monetary expenditure in a manner that does not obtain in the profession of medicine, the question seems to have been settled, at least by usage, that that fact alone shall not preclude their being prescribed by members of the regular profession on the ground that they are regarded in the light of "patent or secret medicines" as specified in our code of ethics.

If the better class of manufacturing chemists continue to place their products upon the market with the conscientious regard for truth and propriety which has characterized their course in the past, and shall not allow competition to tempt them into the methods by which nostrum-venders seek to dispose of their wares, there need be no more cause for classifying them in the same category than of doing so with the educated and meritorious physician and the blatant, ignorant, and pretentious mountebank.

CONTAGIOUS AFFECTIONS.

Should the present rate of increase in the list of contagious affections be maintained for any great length of time, who can feel secure? The number of those that have for years been known to be contagious, to say nothing of the infections, has been just cause for apprehension, but when there have been added to those the numbers that modern bacteriologists are constantly pointing out to us, and the many avenues by which they enter our bodies, the array seems appalling. Not only does man convey them to his fellowman, but the inferior animals upon which we are so much dependent, and by which we are constantly sourrounded, seem to be so many storehouses filled with pent-up danger to man. The cow, that gives the milk to nourish the child when the mother's fails, must, it seems, transfer to the infant the bacilli of the tuberculosis. The cat with which that child would amuse itself must convey to it the poison of diphtheria. The dog that is the boy's faithful companion not only causes hydrophobia but other dangers through the minute bacteria which he conveys to his confiding playmate. Even man's most trusted horse may give him glanders or actinomycosis as well as other affections; and the animals on which man largely subsists must convey to him trichinæ or other dreadful, even if invisible, danger.

Nature seems unable longer to give pure water to drink, but must instil into it sufficient bacilli of typhoid from unknown or unsuspected sources to cause numerous deaths.

Since freezing the water into ice will not destroy those bacilli, nor freezing cream into the refreshing ice-cream give assurance but that those of tuberculosis have been awaiting that opportunity to enter our bodies by the side of Vaughan's

tyrotoxicon, whither shall man betake himself that some of these microscopic fiends will not be found in his wake, assuring him, as of old, that where thou goest I will go and where thou lodgest I will lodge.

If our modern investigators continue much longer their revelations no man can feel safe until he has secured for himself a lodging place in a modern crematory.

SOCIETY REPORTS.

TRANSACTIONS OF THE GYNÆCOLOGICAL SOCIETY OF CHICAGO.

REGULAR MEETING, MAY 25, 1888.

The President, Henry T. Byford, M. D., in the Chair.

Professor E. C. Dudley presented specimens of CARCINOMA UTERI AND A DERMOID CYST.

He said: I have two specimens that do not belong to the series of last year's operations, and consequently would like to present them before giving that series.

The first, a uterus removed for carcinoma; and the second, a dermoid cyst. When I first saw the woman from whom this uterus was taken, I found upon the posterior lip of the somewhat enlarged cervix a suspicious patch, so to speak, just posterior to the os externum, about the size of a five-cent piece, and being under the impression that it was probably a cancer, I excised a small portion of it for examination. Dr. Billings, after microscopic examination, pronounced it carcinoma. The uterus was freely movable, and the disease seemed to be confined entirely to this point. This uterus was removed through the vagina, at St. Luke's Hospital, about three weeks ago. No ligatures or sutures were employed in its removal, the hemostasis being effected by pressure forceps. Without hurrying or making an effort to hurry, I had no difficulty in getting the uterus out in about twelve minutes. Some additional time was required in securing the smaller vessels; it was an unusually hæmorrhagic case. When the operation was completed, the vagina was filled with forceps, about sixteen in all, of which the least important were removed in twenty-four hours, the more important in forty-eight, and the most important, on the broad ligaments, in seventy. The patient seems securely convalescent.

An interesting feature of this case is the early recognition of the disease; indeed, we rarely see carcinoma of the uterus in its incipiency, but, on the other hand, the disease has often advanced too far to give promise of permanent cure by hysterectomy. A case more favorable than this for cure could scarcely be imagined.

The next specimen is from a nullipara, twenty-two years of age, married two years ago. She was recently sent to me by Dr. Charles Gilman Smith. Five days ago I removed this tumor, that, as you see, is a dermoid cyst. There is a piece of bone, an abundance of hair, and a very great quantity of fat. The other ovary, which I have here, is cystic, considerably enlarged, and shows the corpus luteum of menstruation.

A peculiar feature of this case was the immense size, length, and diameter of the two Fallopian tubes; they were very œdematous, showing an obstruction in the circulation somewhere. The fluid of this tumor was very thick, ran through the trocar very slowly, and consequently some of it found its way into the abdominal cavity, and therefore, although there were no adhesions, I introduced a drainage-tube that was removed this morning, having discharged quite a large quantity of bloody serum during the three or four days after the operation. The patient gives every evidence of making an uncomplicated recovery.

This patient recovered.

The President showed the following specimens:

MULTIPLE SUBSEROUS FIBRO-MYOMATA OF THE UTERUS.

This specimen is a typical example of multiple subserous fibro-myomata of the uterus, ranging from the size of a small pea to that of a cocoanut. The enlarged ovaries, with the normal tubes, are hanging high up on either side. Here is a large mass, nearly the size of the fist, that projected down to the pelvic floor, and that had been felt per vaginam as a tumor beside the cervix. It was undergoing calcification. The patient, Mary N., was a negro virgin, thirty-two years of age, who had not menstruated until her twentieth year. Five years ago, a physician diagnosed a tumor of the intestines by external manipulation. The indications for removal were the failure of other treatment, uninterrupted growth, severe and ever increasing attacks of pain, and a location which would have rendered its further development dangerous and its future removal one of extreme difficulty. The menses, although more abundant than formerly, had been coming less frequently of late. This would seem to signify a falling off in activity of uterine and ovarian function, and a final cessation of growth—a result I have often seen in these cases of multiple subserous growths. Had the location and relations of this tumor been different, its removal would never have become a necessity. The broad ligaments and bladder were carried up so high, and were so closely adherent to the mass, that the prevention of excessive hæmorrhage during the formation of the pedicle was difficult, and made the operation long and laborious. After partial separation of the bladder and broad ligaments, a temporary elastic ligature placed around the middle of the tumor, and above the part where I had to work, was of great value in diminishing its vascularity and checking the profuse venous oozing. The figure drawn by Dr. Munde, on page 303 in the March number of the *American Journal of Obstetrics* of this year, represents almost exactly the relations of this tumor, except that the bladder is not shown. After separating the bladder sufficiently, I made an incision over the posterior surface of the pelvic growth, enucleated it rapidly and easily, and threw another elastic ligature around the uterus, at about the level of the internal os. The stump was fixed to the abdominal walls according to Hegar's method, except that I drained the lower end of the wound and surface of the bladder by means of a strip of iodoform gauze, left for three days; and also the bed of the enucleated tumor by a small glass tube above the stump, left for five days. I introduced the pins about half an inch above the elastic ligature, in order to let the cervix down as low as possible. Plain absorbent cotton was used as a dressing to the stump, after Bantock's manner, causing it to become dry and horny, and thus entirely harmless. She recovered without an unfavorable symptom, and took no medicine except a laxative.

UTERUS REMOVED FOR CARCINOMA OF THE CERVIX.

I have here a uterus, with a broad rim of vagina attached, that was removed for cervical carcinoma; also the left ovary, which was four times its natural size, and imbedded in lymph, but not carcinomatous.

The patient, Mrs. O. B., is 25 years old, and has two children, the younger one but two years old. As the posterior wall was infiltrated up to the internal os, and the uterus more rigid than usual in its attachments, I started out to make an exploratory incision in the cul-de-sac of Douglas, and expected, if I found evidences of extension of the disease beyond the uterus, to close the incision and wait two or three weeks before attempting a palliative operation. I dissected and tore my way up between the uterus and rectum, but could not get into the peritoneal cavity. A fibrous band, extending from the posterior cervical wall backward, was in the way. Feeling confident that the uterus, and perhaps all of the disease, could be safely taken out, I carried the vaginal incision completely

around the cervix, dissected off the bladder, and pulled the fundus forward into the vagina. The fibrous band that connected the uterus with a knuckle of intestine was dried and cut and the cul-de-sac opened from above, the broad ligaments clamped with hemostatic forceps, and the uterus cut out between them. The ovary was then peeled out of its bed of lymph in the left lateral sacral peritoneal pouch, ligated and cut off. The ligatures, which were left long enough to protrude at the vulva, came away in about ten days. The peritoneal wound was left open, and the vagina plugged with iodoform gauze. The forceps were removed in twenty-eight hours, and the tampons in four days. The recovery has so far been uneventful and uninterrupted, and without any medication except a single dose of morphine and the usual laxatives.

Martin, Fritsch, Leopold, and others, have adopted set methods of procedure for vaginal hysterectomy, from which they seldom vary, except in unimportant particulars. Their skill may enable them to do so. My experience with six cases has, however, led me to believe that the safest way for the patient is to vary the operation to suit the case. For instance, in this case I could not have ligated the broad ligaments before anteverting the uterus without working in the dark and greatly increasing the danger. In my third case the uterus was so broad that I could not isolate the broad ligaments until I had retroverted the uterus. In my second case the vulva and vagina were so small, and the tissues so rigid, that I could not readily antevert or retrovert, nor could I draw the organ down so as safely to apply ligatures, hence I applied three forceps on each ligament, cutting the tissues clamped by one pair before applying the next one above. In the first, fourth, and fifth operations I applied ligatures from below upward, scarcely touching or seeing the peritoneum except on the stumps and on the uterus.

The cases all recovered, and it seems to me of much less importance whether or no sutures or forceps are used, or whether the uterus is anteverted, retroverted, or merely drawn down, or whether half an hour or two hours is consumed, than that the operation be properly, carefully, and completely done. To choose the most direct method for the particular case, to handle the tissues carefully, to make sure against hæmorrhage, and to provide an exit for the discharges, makes the best operation and will give the best results.

THE UTERINE APPENDAGES REMOVED FROM TWO CASES BY VAGINAL SECTION.

I wish also to present specimens from two cases of vaginal section, made four weeks ago for the removal of the uterine appendages. You will notice that the organs are not mutilated, and present the same appearance as if removed by abdominal section. In one case the tube was dilated with bloody serum, and resembled an intestine so closely that I made a thorough digital exploration before I ventured to ligate it. The ovary is about the shape of a slice of bread, and fully four times its natural size. The ovary and tube were adherent to each other and to the posterior surface of the broad ligament. Both patients are making a good recovery.

Professor C. T. PARKES: I expected to have two specimens as the result of vaginal hysterectomy with me to-night, but they have not come, and I will refer to them only so far as Dr. Dudley's specimen is concerned. In both cases the manifestation of the disease was not great. In one, at least, the diseased point did not cover a space any larger than in the case shown by Dr. Dudley, and in both of them sections were made and submitted to microscopic examination, and they were shown to be carcinomas. The uterus was removed by vaginal section. I was interested in what Dr. Dudley said about the time at which the cancer was removed. He said that in all the cases of complete removal of the disease, those cases that were removed

as early as the one shown would be the most promising cases. I remember very distinctly, in both of these operations, on the side in which the disease showed itself the section of the broad ligament with the scissors was not as easily made as on the other side, and when removed the density of the tissue was greater on that side than on the other, creating in my mind the suspicion that some absorption had taken place, although it was not positively detectable; so these cases I shall watch with interest to see if there is any return of the manifestations.

I was somewhat surprised to hear Dr. Dudley say that in this operation, which was done so readily and rapidly, he was compelled to use sixteen forceps. I have done this operation half a dozen times, and in none have I been required to apply more than three forceps, although the bleeding was in each controlled by hemostatic forceps. In these last two cases, the specimens of which I will show at some future time, but two forceps were used; they were long forceps, and embraced the whole length of the broad ligament fairly and squarely, and there was no hæmorrhage of any consequence. Both patients have passed beyond the necessity for further attention, and their recovery is established so far as the operation is concerned.

One point with reference to the removal of the fibroid uterus and the use of the elastic ligature. I remember in one of my cases of removal of the fibroid uterus, of using the elastic ligature as a temporary application to control hæmorrhage. In one case where I applied the ligature—and I speak of it as a warning as to the care required in its use—the section was made low down, and there was very little stump to take hold of after the uterus was removed; I congratulated myself upon the ease with which it was done, and, in the midst of my congratulations, the ligature slipped over the end of the stump, and the stump was at the bottom of the pelvis, and the woman lost a good deal of blood before it could be secured.

I had the honor of reporting a case of successful removal of a good-sized tumor about two years ago. Two or three days ago a lady came into my office, perfectly well so far as her general health is concerned, but with an open sinus in the abdominal wall and through the vagina, with the history that some months ago an abscess formed in the line of the incision, and from the opening she got a ligature. You will remember that in reporting that case I said I had had five cases of removal of fibroid tumors, and the first three died. These three were done by the extra-peritoneal method, and I concluded that was not my forte, and the next case, which was this one, I treated by the intra-peritoneal method, and the woman got well promptly, and until a few months ago was entirely well, until these ligatures came away of their own accord. The other case was also done intra-peritoneally, and she is perfectly well and doing her ordinary work now.

Dr. JOHN BARTLETT: Dr. Parkes refers to the difficulty he got into on account of the slipping of the rubber ligature. He should have indicated the way in which he helped himself out of it. For a moment he vainly sought for the lost pedicle lying deep in the pelvis in a pool of blood; he then thrust the handle of an instrument into the vagina and thus lifted the stump of the cervix out of the pelvis within easy reach.

Dr. E. C. DUDLEY: It is possible that, as far as hemostasis is concerned, the forceps may be safely removed after twenty-four hours, but there are two reasons for leaving them longer. First, the wound secretions, always abundant during the first two or three days, find their way by continuity of surface along the track of the forceps out through the vagina; the forceps, therefore, very effectively facilitate drainage. Second, the tissues grasped in these forceps are certain to slough, and this being the case the sooner the sloughing tissue

comes away the better. Now, the longer the forceps are left the longer the tissues will be compressed and the more quickly will they slough, and if left two or three days, the tissues in their grasp will come off almost as soon as the forceps are removed, or the forceps may even drop off without being removed at all.

It is better ordinarily not to antevert or retrovert the uterus, because if a carcinomatous cervix is thereby forced into the peritoneal cavity, carcinomatous or septic infection may result. Moreover, when the uterus is anteverted or retroverted, the cervix being in the peritoneal cavity and the corpus being in the vagina, you have the larger portion of the uterus in the vagina, where it is an impediment to the operator.

As soon as the opening is made it is well to force a sponge through it into the pelvic cavity, then another and another. They prevent the formation of blood clots, which it might be difficult to remove. When the operation is done withdraw these sponges, and the toilet of the peritoneum is made. A string attached to each sponge keeps it from working its way beyond the reach of the finger.

I shall never again use the vaginal tampon of iodoform gauze as a last step in the operation. The vagina is an excellent drainage tube if left open, but the tampon impairs its efficacy as such. An antiseptic dressing may be placed over the vulva around the handles of the forceps; if any tampon at all is to be used in the vagina it should be placed between the anterior wall of the vagina and the forceps, not between them and the posterior wall where it would be doubly certain to obstruct the outflow of the wound secretions.

Professor E. C. Dudley read the following paper, entitled A YEAR'S WORK IN ABDOMINAL SURGERY.

The list of seventeen cases which I now report includes all of my work in abdominal surgery in 1887. Eight operations were for the removal of the uterine appendages, seven for the removal of ovarian and parovarian cysts, one for the removal of the uterus through the vagina, and one for the incision and drainage of a pelvic monocyst.

The eight patients from whom the uterine appendages were removed had, in every instance, suffered from recurring pelvic inflammations, which had rendered their lives miserable, for which other means of relief had apparently been exhausted, and for which this operation was a final resort. The results of these operations cannot be as satisfactorily reported now as they might be at a later date.

Cases 2, 8, 14, and 17 have been apparently cured.

Cases 3 and 12 were of nervous, neuralgic patients who had suffered for many years from disorders of nutrition, dyspepsia, dysmenorrhœa, pelvic pains referable to the region of the ovaries, particularly the left ovaries, which were prolapsed, and from various other disturbances which go to make up the symptom group of hysteria. These have been improved, but the improvement has been chiefly confined to the relief from pelvic pain and dysmenorrhœa. It is too early to predict results relative to the nervous aspects of these two cases.

Case 4 was not materially relieved until after the shortening of the round ligaments for a retroversion, which persisted after the removal of the appendages. I am informed that she is now very materially improved, if not cured. Case 5 has passed from my observation, and results cannot therefore be given.

In Case 8, each tube contained not less than four ounces of pus. The ovaries were cystic and enlarged; no adhesions. One tube was brought up into the wound, and its contents drawn off by means of a small trocar, before the ligature was applied. The other was ligatured and removed intact. The tubes were enormously distended, and I think would have burst before long had they not been removed. The peritoneum in the region of the appendages was studded all over with small pearly

Number.	Residence.	Medical Attendant.	Age.	Married or Single.	Disease.	Operation.	Drainage.	Date.	Recovered.	Died.
1	Danville, Ill.....	Dr. R. W. Gillette.	..	M.	Ovarian tumor.....	Removal of left ovary.....	No.	February	R.	....
2	Chicago, Ill.....	Dr. Charles Gilman Smith.	33	M.	Recurring pelvic inflammation; prolapsed left ovary; extreme retroflexion and hypertrophy.	Removal of uterine appendages	No.	May 7	R.	....
3	Grand Rapids, Mich.	Dr. E. C. Dudley..	27	S.	Recurring pelvic inflammation; prolapsed ovary; salpingitis.	Removal of uterine appendages	No.	June 1	R.	....
4	Chicago, Ill..	Dr. John W. Koehn.	29	S.	Recurring pelvic inflammation; prolapsed ovary.	Removal of uterine appendages	No.	July 2	R.	....
5	Assumption, Ill....	Dr. Rivard.....	34	M.	Inflam. of uterine appendages; recurring peritonitis; retroflexion.	Removal of uterine appendages	No.	July 2	R.	....
6	Rock, Iowa...	Dr. Charleton.....	18	S	Ovarian cyst; exten. adhesions....	Removal of left ovary.....	Yes.	July 5	R.	....
7	Sycamore, Ill.... .	Dr. W. W. Bryant.	..	S.	Parovarian cyst.....	Removal of left ovary.....	No.	July 20	R.	.
8	Thorndyke, Mass..	Dr. G. H. Felton..	32	M.	Double pyo-salpinx; cystic ovaries.	Removal of uterine appendages	No.	Sept. 6	R.	....
9	Princeton, Ill.....	Dr. A. H. Thompson.	30	S.	Pelvic monocyst.....	Abdominal section; drainage..	Yes.	Sept. 26	R.	....
10	Burlington, Vt.....	Dr. Frank Billings.	38	M.	Right parovarian cyst; cystic ovaries; salpingitis.	Removal of both tubes and ovaries.	No.	Oct. 13	R.	....
11	Chicago, Ill.....	Dr. G. W. Webster	38	M.	Ovarian cystomata; universal adhesions.	Removal of both ovaries.....	Yes.	Oct. 17	R.	....
12	Grand Rapids, Mich	Dr. E. C. Dudley..	28	S.	Recurring pelvic inflammation; prolapsed ovary.	Removal of uterine appendages	No.	Oct. 28	R.	....
13	Sandwich, Ill.....	Dr. V. V. Vermilye	23	M.	Parovarian cyst....	Removal of left ovary.....	No.	Nov. 1	R.	....
14	East Saginaw, Mich	Dr. Thrall.....	37	M.	Inflammation of uterine appendages; universal adhesions.	Removal of uterine appendages	Yes.	Nov. 4	R.	....
15	Chicago, Ill.....	Dr. M. L. Scudder.	36	M.	Ovarian cyst; exten. adhesions.	Removal of left ovary.....	Yes.	Nov. 16	R.	...
16	Sturgeon Bay, Wis.	Dr. Sibree.....	51	M.	Sarcoma of uterus; rectal adhesions.	Vaginal hysterectomy..... ...	No.	Nov. 19	R.	....
17	Sturgeon Bay, Wis.	Dr. Sibree.	..	M.	Inflammation of uterine appendages	Removal of right ovary and tube	Yes.	Dec. 24	R.	....

NOTE.—One of the above operations was performed at a private residence; fifteen at St. Luke's Hospital; and one at the Presbyterian Hospital. Fourteen, though in hospital rooms, were private patients.

NOTE.—This list of seventeen consecutive recoveries might be increased to twenty-one by going outside the year 1887.

points, giving evidence of miliary tuberculosis; no ascites. Dr. Frank Billings, upon microscopic examination of the contents of the tubes, found the bacillus tuberculosis. This is contrary to the statement of an English ovariotomist, who declares that tuberculosis does not exist in the tubes. No drainage was used; perhaps drainage might have been desirable on account of the tubercular disease in the peritoneum.

In Case 17, only the right ovary and tube were removed, the other being entirely absent—a condition which has been observed in other cases. This woman, however, had borne children, and contrary to rule in such cases, the uterus was entirely symmetrical, the left side having been as perfectly developed as the right. At the left horn of the uterus, where the tube should have joined it, there was a slight protuberance, indicating a very rudimentary tube, and at the point of this protuberance, a little depression could be seen, but whether there was a connection between this depression and the interior of the uterus I did not determine. The ovary and tube which were removed were extremely adherent; the ovary was cirrhotic and had been the seat of pain for years.

Of the seven ovariotomies, four were for ovarian and three for parovarian cysts. They illustrate both the gravity and the simplicity of these operations. The parovarian cysts were easy of removal; the others were adherent, and two of them presented difficulties which rendered their removal almost impracticable.

In Case 11, the tumor was so intimately adherent throughout its entire surface that I was unable to break up the adhesions in the usual way, but was obliged to split the cyst-wall, leaving what might be called the capsule of the cyst in the abdomen, stitching it to the abdominal wound. The layers of the cyst-wall were so intimately connected that the greatest difficulty was experienced in separating them. The torn surfaces bled so profusely that I used Mikulicz's drainage, packing the cavity with iodoform gauze, leaving it in for twenty-four hours, and then substituting the drainage-tube. After a long, tedious convalescence, the patient was discharged, having a fæcal fistula at the lower extremity of the wound. Whether this fistula resulted from some damage done to the intestine in the operation, or from the pressure of the glass drainage-tube, or from an ulcerated condition of the lower bowel, which had been recognized previous to the operation, I do not know. She had been a victim of epilepsy, which for a number of months after the operation was in abeyance, but which has now reappeared and of which she will probably die.

In Case 6, the adhesions were also very extensive; not less than a square foot of surface was exposed in separating them. After breaking up some very extensive parietal adhesions on the right side, the hæmorrhage was quite profuse and from a hundred points, and not controlled by the ordinary isolated ligatures. Hemostasis was finally secured by passing a number of silk sutures, half an inch apart and parallel to one another, deep down beneath the bleeding surfaces, and tying them tightly. This method seems preferable to the actual cautery. It is rapid and effective. The patient did well for three weeks and seemed to be surely convalescent, when she came near dying of septicemia consequent upon several hypodermic sloughs, hypodermics having been given at the time of the operation for an alarming heart failure.

In Case 1, a croupous pneumonia developed immediately after the operation, from which the patient narrowly escaped a fatal result.

The vaginal hysterectomy was for sarcoma uteri, and has previously been reported to this society. The patient, I understand, continues in good health.

The case of incision with drainage was unlike anything I had ever seen. The cyst-wall was very thin, was opened directly without invading the abdominal cavity, and so far as I was able to determine, was inti-

mately adherent all around, except perhaps deep down in the pelvis and on its posterior surface. I could feel the ovaries and uterus through the cyst-wall. Lawson Tait describes a variety of abdominal cyst in many respects similar to this.* He reports six cases, all occurring in young women between the ages of sixteen and twenty-six. Before operation they appeared to be parovarian cysts. Upon opening the abdomen, were found intimate adhesions between the cyst and peritoneum, limpid fluid, cysts lined with epithelium, smooth glistening surface; the uterus and ovaries could be felt through the cyst-wall, were apparently healthy and independent of the cyst. The tumors were therefore neither ovarian nor parovarian. Tait is disposed to refer them to a distinct class of pathological cysts. His impression is that they are formed by dropsical distention of an ovule which had not become impregnated, but which, having dropped into the peritoneal cavity, had there become attached and developed.

An examination of the contents of this cyst gave the following results:

Report of Analysis of fluid from abdominal cyst opened by Dr. Dudley at St. Luke's Hospital, September 26, 1887. A sample of the fluid containing about three fluid ounces was taken.

Upon inspection the fluid appears clear, translucent, and contained no (macroscopic) sediment. Color, amber; odor, none; reaction, neutral; specific gravity, 1.008.

Chemical examination showed albumen present in large quantity (nitric acid, dilute, and heat test), so that the mixture coagulated into a semi-solid mass.

Another portion diluted four times by distilled water showed, after applying the acid and heat, shaking to break up the coagulum, and allowing to settle for twenty-four hours, a precipitate filling one-third the bulk of the mixture.

Applying Francklyn's method of reduction (*Journal American Medical Assoc.*, April 4, 1885), it is found that the original fluid contains about .026 by weight of albumen.

Tests for urea, uric acid, phosphates, and peptones were applied with negative results in each instance.

Microscopical examination of twelve slides revealed no sediment except a few particles of amorphous material (probably extraneous). H. H. FROTHINGHAM.

43D STREET AND LAKE AVE., OCTOBER 3, 1887.

Preparatory Treatment.—Unless there was some special indication to the contrary, the preparatory treatment was short and simple, occupying not more than two or three days, as follows: A cathartic about forty-eight hours before the operation; repeated vaginal douches of hot castile soap suds, with thorough cleansing of the external genitalia and of the entire abdominal wall, especially of the umbilicus. One or two general shampoo baths or if practicable a Turkish bath with a lather shampoo of the hair. The hour for operating has been nine o'clock in the morning, a cup of beef-tea having been given two or three hours before. Previous to the day of the operation diet is not restricted or modified.

Antisepsis.—Antiseptic drugs as a rule were not used in direct connection with the operation. They were employed for the purpose of rendering hands, instruments, and patient surgically clean, and then thoroughly washed off with water which had been sterilized by filtering and thrice boiling; that is, antiseptic drugs were not brought in direct contact with the wound. Sponges which had been kept in weak solutions of sulphurous acid, carbolic acid, or corrosive sublimate were never used until these drugs had been thoroughly washed out with sterilized water. Indeed, everything that was to be in direct connection with the operation was treated in this manner. Fumigation of the patient's room has only been done when it had previously been occupied by several cases or by a suspicious case. Sometimes,

* "The Pathology and Treatment of Diseases of the Ovaries." Fourth edition, page 184. William Wood & Co.

as a matter of ceremony, a little iodoform was sprinkled over the wound before the dressings were applied, but it smells bad and may do harm by exciting or keeping up nausea.

If, in the toilet of the peritoneum, there be blood, oozing points, or pus, or if these be even suspected, I wash out the abdomen freely, putting in quarts or gallons of water, and when in doubt whether this should be done, I remove all doubt by doing it.

The same rule applies to drainage. If in doubt, always drain. I have recently lost a patient whom drainage might have saved. The adhesions were extensive, but the abdomen being perfectly dry, I closed without drainage. She did badly for the first thirty-six hours. I reopened; there had been no hæmorrhage, but the abdomen contained an abundance of bright red serum. If this had not been allowed to accumulate at all, the result might have been different.

The glass drainage-tube is always preferred. The tubes kept in the shops are too large. I have had some made, of the diameter of lead pencils, having the shape of test tubes, with many small perforations the size of a pin head at the closed end. Two or three of these tubes may be introduced if desired. They do no harm; they can be removed if nothing comes through, and the openings immediately close, and they carry off the bloody serum or other fluids as efficiently as tubes of large size. Drainage not only prevents septic infection, but by keeping the abdomen dry serves as a hemostatic, as moisture favors hæmorrhage. It is important that the perforations at the end of the drainage-tube be quite small, otherwise portions of omentum are apt to work themselves through and make trouble in the removal of the tube. I have recently had two such cases; in one the tube was nearly half full of omentum which had worked its way through an opening only one-tenth of an inch in diameter. This annoyance may be in a measure prevented by giving the tube a turn or two whenever the dressings are opened.

Medication and Diet.—The cases included in this report have recovered with very little medicine, some without any at all. Opium has been used very exceptionally. A patient who begins to take opium for pain after abdominal section ordinarily continues to have the pain and to require the opium; but if the drug be withheld, the pain generally subsides.

Case 11 strikingly illustrates the advantage of a non-opium treatment. Abdominal tenderness and distention, and other signs of peritonitis appeared soon after the operation; it became essential to relieve the distention by evacuation of the bowels; soap and turpentine enemata were inadequate, and the movement was not without difficulty secured by means of calomel and soda, whereupon the peritonitis subsided. Had the secretion been locked up under the influence of opium, the peritonitis would have probably extended and I fear with fatal result.

It is, perhaps, not too much to say that the modern treatment of peritonitis by catharsis, judiciously employed, is sound. Not less than half of my patients after abdominal section have a cathartic before the end of the third day; the others are usually treated with copious enemata of stiff soap suds in which a teaspoonful of turpentine to the quart has been thoroughly mixed. Upon the least suspicion of distention an action of the bowels should be secured.

During the first twenty-four hours no food whatever is given; only a little hot water, or ginger ale, or possibly champagne. On the second day a little barley water is cautiously given, soon to be followed, if there is no disturbance or nausea, with half-teaspoonful or teaspoonful doses of milk, repeated occasionally and increasing in quantity, as the patient gives evidence of being able to bear it.

The Staffordshire Knot.—Three years ago I saw Mr. Tait apply the Staffordshire

knot. In the first case, after my return, I attempted to apply it and the patient died of hæmorrhage. The next year I saw Mr. Tait operate fifteen or twenty times, and particularly observed his method of applying this knot, and since then have used it invariably, and consider it, generally speaking, the best ligature. A distinguished surgeon in New York has lost a number of patients from hæmorrhage with the Staffordshire knot, and has discarded it as dangerous. Indeed, a number of operators have had most unpleasant experiences in its use.

The secret of Mr. Tait's success lies in a single maneuver. After the pedicle has been transfixed, the loop drawn through and brought over to the point of transfixion and placed between the two free ends of the ligature, these latter are held firmly between the thumb and finger of the left hand close to the point of transfixion. Then with the right hand he catches each free end separately, and draws the ligature perfectly tight, and while the thumb and finger of the left hand still hold the thread at the point of transfixion to prevent the ligature from slacking again, the operator, with his right hand, aided by the assistant, makes a hard knot.

An additional precaution to prevent the ligature from slipping may be wisely observed by transfixing at two points, first forcing the loop through at the juncture of the Fallopian tube and uterus in a direction from the operator, then carrying it along on the further side of the broad ligament and drawing it through again in the direction of the operator, transfixing at the hilum of the ovary. The loop may then be drawn over the tube and ovary and that portion of the broad ligament which it includes and tied as already described. This modification of the Staffordshire knot, which, I am informed, Mr. Tait also occasionally employs, makes hemostasis doubly certain, and is to be preferred on this account.

A word about the silk. The great annoyance which every operator has experienced in breaking a thread at a critical moment, while attempting to apply a firm ligature, is sufficient proof that the silk ordinarily sold by instrument makers is generally inferior and often worthless. A variety of twisted silk, known as "Chinese Grass," may be found at the fishing-tackle shops. For surgical purposes it is unexceptionable, inasmuch as it has the qualities of absolute purity and great strength.

The Arrest of Menstruation.—One of the chief objects in the removal of the uterine appendages, in a great majority of cases, is to arrest menstruation; in other words, if menstruation be not arrested, the operation in very many cases fails. In the early history of the operation the ovaries alone were removed, or the ovaries and a part of the tubes. It was found in some cases that menstruation continued as before or increased. Then the tubes began to be removed also, and the complete arrest of menstruation was more frequent. It was further found that if the tubes were removed entire, close to the uterus, menstruation was almost always arrested, and that in many cases which were thought to be exceptions, the tubes in reality had not been entirely removed. Oftentimes a small knuckle of tube was discovered to have been left, and to be so closely adherent to the uterus that it escaped notice. The removal of this knuckle has been known to arrest menstruation. Reasoning from these facts, it was concluded that the tubes really have more to do with menstruation than the ovaries.

Contrary to this idea, Dr. Arthur Johnston, of Danville, Ky., in a conversation with me several months ago, said that the true explanatlon of these facts might involve an entirely different conclusion. There is a little plexus of nerves in the broad ligament, in the angle formed by the uterus and Fallopian tube. When the tube is entirely removed, this plexus of nerves is entirely removed also, and on this account it may be that menstruation ceases, rather

than on account of the removal of the tubes.

If this be true, it is a fact of immense value. Possibly a ganglion may be found in this region, and it may follow that the removal of this plexus alone, without reference to the ovaries and tubes, may arrest menstruation. This specimen from Case 2 illustrates the plexus of nerves, which is easily recognized by the naked eye.

The Incision.—The opening into the abdomen has, in most instances, been short. Surprising as it may seem, it is sometimes easier to perform difficult manipulations in the abdomen through a small opening than through a large one. The large opening permits the intestines and omentum to rise up in the way of the operator, and to render inaccessible the field of operation. This is even true of large ovarian cysts with extensive adhesions. After the removal of the fluid, the lax abdominal wall permits the opening to be moved about to almost any part of the cavity. In many instances the short incision enables the operator to do his work with the minimum amount of operating, and for obvious reasons, therefore, with the minimum risk.

It is well, in closing the abominal wound, to tie the sutures with bow knots, leaving the ends long, in order to obviate the necessity of introducing new sutures, in case it becomes desirable, at any time, to re-open the wound.

General Remarks.—It has so happened that in almost all of these cases there has been a steam radiator under the window before which the operations were done, the patient's feet being toward the window. This insured a constant warmth of the feet during the operation, and perhaps has in some degree contributed to the freedom from shock.

In removing the appendages, the toilet of the peritoneum may be much facilitated by forcing a soft sponge down into the cul-de-sac of Douglas as soon as a tube and ovary is drawn up into the wound to be ligatured; two or three sponges may be required. If there is much oozing, they may be frequently changed. By this means the blood is immediately taken up by the sponges, and when these are removed the peritoneum is dry. Otherwise blood would find its way into the cul-de-sac and form a clot which might escape notice.

I have not brought the specimens, with the single exception of Case 2, because there is not very much of interest in the ordinary specimen. Every one presents specimens in abdominal surgery, and it has, therefore, ceased to be a luxury to look at them unless they are very remarkable.

Professor C. T. PARKES: I think Dr. Dudley is to be congratulated upon these interesting and successful cases, but I think the doctor will not have done all his duty until he has given us some of the snags he has met with in the shape of deaths. These cases are full of interest, but I have always found the cases that have died have been the ones from which I have learned the most. I have no doubt that will come in due time.

So far as my experience goes in the removal of the uterine appendages, in every case there has been found disease of the appendages or ovaries, there was either closure of the internal or external opening of the tube, some enlargement, or some disease of the ovaries themselves, which really pointed to the condition of the appendages as the cause of the trouble.

In the case Dr. Dudley reports of cyst with drainage, that had no connection with the uterus or ovaries, which, after an opening was made into the abdominal cavity and the finger introduced, the ovaries and uterus were felt perfectly normal, gave rise, in my mind, to the suspicion that, instead of being a cyst with a distinct and separate wall that could not be recognized or differentiated from the peritoneum, it was a case similar to one I have seen, which would come under the appellation of an encysted dropsy, where the inflammation of the peritoneal cavity had been of such a nature as to agglutinate the intestinal folds togeth-

er, and formed a perfect roof to the cavity, and the fluid had gone on accumulating until the quantity of fluid had shown the external manifestations of a cyst; when cut into, the cavity was found to have no connection with the uterus. It is what Spencer Wells calls an encysted dropsy. I think it would be difficult to say that there was a true cyst-wall in a case of that kind, if no separation whatever could be found. The character of the fluid he mentions rather points to that condition.

I was exceedingly well pleased to hear the doctor speak of his experience with reference to antiseptic precautions; it agrees with my experience so far as abdominal work is concerned. In a case I reported a few years ago, the only case in which I had had much trouble in that series, and in which I carried out Lister's instructions, it gave me more trouble than all the rest, and I think it was from using too strong antiseptic applications, so I resumed the same course the doctor has indicated with regard to antiseptic precautions in abdominal cases. Several years ago, in the Chicago Medical Society, I took occasion to refer to the fact that I had tried the Staffordshire knot and it failed. I did an operation for the removal of the uterine appendages before a class at college, and desired to illustrate the Staffordshire knot. I thought I understood all about it, and when I had it applied, cut off the appendages and returned the stump to the abdomen, but to my astonishment the wound filled with blood, and I had quite a time to fish it up from the cavity and stop the bleeding which was going on freely. I recognized then the very fault the doctor has illustrated; the trouble was that I did not secure the pedicle at all in tying the knot. Recently, on a visit to New York, I saw Professor Pope do two laparotomies for uterine disease. In one of them I asked him to illustrate to me the application of the Staffordshire knot, and he did it in the manner which the doctor has illustrated, and showed me plainly where my fault had been in not pulling up the ligature on each side before the knot was tied.

So far as my experience goes, in many of these cases which require the removal of the appendages, there are no symptoms that can be fixed, so far as the physical examination is concerned, as coming from any disease of the uterus or appendages, but after the operation is done it often turns out that disease is found in the tubes.

There was one point I wished to speak of—the case of epilepsy relieved by an operation. I am associated with a gentleman who has had a great deal of experience in one of the insane asylums with epileptics, and he has found it to be a fact that no matter how small an operation may be done, and no matter where it is done, as a direct effect of that operation the patient is relieved of epileptic seizures for some time.

Dr. HENRY T. BYFORD: I have had a great deal of experience with Tait's knot, but it has all been confined to one case. I pulled the threads tightly before tying, closed up an apparently dry peritoneal cavity, and lost my patient from hæmorrhage. The ligature had not held. As the method which I ordinarily employ has never failed me, I have not since felt inclined to try the more complicated varieties, which, although they may be as safe, are more difficult of application. I pass a double thread through the edge of the ovarian ligament and through the mesosalpinx near the Fallopian tube, thus tying up the ovarian ligament, Fallopian tube, and ovarian artery on one side, the rest of the broad ligament on the other, and then the whole stump *en masse* with the same threads.

With regard to after-treatment, I think that one of the most important recent advances has been the administration of saline laxatives in place of opiates; as soon as symptoms pointing to peritonitis, sepsis, or intestinal obstructions make their appearance, they must be given early.

Professor KNOX: What is your object in getting antiseptics out of your ligatures and instruments?

Professor DUDLEY: Not having removed the cyst in Case 9, I am unable to prove that a cyst existed. I think Dr. Parkes would readily agree with me had he been present at the operation. Among those who saw the operation there was no difference of opinion.

Fumigation of an operating room is undoubtedly an element of safety, although it is practically impossible to sterilize the air of a room by this or by any other means, because, after fumigating, other air will come in. It is evident, however, that, under ordinary conditions, the danger of infection from the air is very small as compared with the danger from non-sterilized fingers, instruments, ligatures, sponges, etc. The object of washing instruments, sponges, and ligatures free of antiseptic drugs is to avoid the irritating influence which these drugs might exert if brought into direct relation with the operation.

The question has been raised relative to the removal of the appendages for the relief of dysmenorrhœa. In none of the cases reported was dysmenorrhœa the prime indication for the operation, although dysmenorrhœa was frequently one of a variety of morbid conditions, the pathological causes of which it was hoped the operation would remove. In Case 2 there had been dysmenorrhœa, but the operation was not done on that account, although I would not say that it never should be done in an extreme case, incurable by other means.

Professor JAGGARD: What was the indication for operation in this case of removal of the appendages? The specimens show no appearances of disease that I can make out.

Professor DUDLEY: This was a case of retroflexion, which I had failed for nearly two years to support by artificial means. The patient had suffered for several years from recurring attacks of pelvic peritonitis; the left ovary was prolapsed and was the seat of constant unremitting pain. Although urged to do this operation for a year, I had refused, and was only induced to undertake it after a long effort to give relief by other means. There was no element of hysteria in this case.

The patient had been a victim of more or less constant and acute pain; since the operation she has been free from pain. She had been obliged to spend a large part of each day in the reclining position; since the operation she requires the usual amount of rest at night, and no more. Her nutrition had suffered to an extreme degree from reflex gastric disturbances, and she was unable to take much food of any kind; soon after the operation digestion became normal, she could take all kinds of wholesome food, and the anæmia and emaciation promptly disappeared. She had been unable to walk or stand without great difficulty, or to endure the least fatigue; since the operation she has been able to swim, to walk, and to dance without limit. The patient has been a pitiable invalid; after the operation she became well.

In most of the other cases the appendages themselves showed more gross indications of disease, but in this case the removal of the appendages has given relief to a most distressing and most obstinate malady, which was just as serious for the patient as it could possibly have been had the ovaries and tubes been the seat of every pathological development which has ever been known to affect these organs. In fact, the results have, perhaps, been more brilliant than in any other case of this series.

I would not refuse to remove the ovaries and Fallopian tubes for the relief of a malady which could not be cured by any other means, if that malady rendered the patient a miserable and useless invalid, and if the patient could be cured by that operation.

Much disease may exist in the appendages with very little indication for their removal. A proposition which should make the extent to which the appendages are diseased proportionate to the indication for their removal would be untenable.

The operation is certainly liable to an

immense amount of abuse, a kind of abuse which is most serious for the patient, and on this account it is probably becoming the subject of vigorous criticism, which should have the fortunate effect of limiting its performance to suitable cases. The removal of the appendages produces senile atrophy of the remaining reproductive organs, even though these organs be the seat of disease. Cessation of function follows, therefore, even though that function be modified by disease—that is, with the atrophic process, pathological conditions cease. Consequently a dangerous possibility of this operation lies in the fact that it is certainly capable of curing a number of maladies which ought to be relieved by other means. The temptation to produce brilliant results by a prompt and certain remedy must always be great when other measures are long, tedious, and uncertain.

MICHIGAN STATE BOARD OF HEALTH.

Regular Meeting, July 10, 1888.

The regular quarterly meeting of the Michigan State Board of Health was held in Lansing, July 10, 1888.

Besides the routine business, certain proposed bills for perfecting the public health laws of the State were discussed and referred to the Committee on Legislation. The objects of the bills are as follows:

1. A Bill to prevent the use and sale of infected milk and infected-milk products;

2. A Bill to declare the least proportion of milk solids and of fat in unadulterated milk;

3. A Bill to require the labeling of all gasoline, benzine, and naphtha sold at retail; and

4. A Bill to prevent the introduction and spread of dangerous communicable diseases.

Relative to Bill No. 2, mentioned above, it may be said that a law in Michigan prohibits the sale of impure or adulterated milk, and provides for an inspection of milk in Detroit and other cities and incorporated villages in the State. This law provides penalties for its violation, but it does not fully explain what is meant by pure milk. In each prosecution it is necessary to go over the whole ground of proving what should be taken as a standard, and why. If an unscrupulous chemist appears for the defense, and gives it as his opinion that the standard is too high, the offending milkman may escape because of this conflict of testimony. If the law fixed a definite legal standard, such a result would not be possible. The thousands of analyses made and recorded in the different States of the Union supply a basis for fixing such a legal standard.

The object of Bill No. 4, is to punish any one who, knowingly affected with small-pox, scarlet fever, diphtheria, or any other dangerous communicable disease, shall willfully enter a public place or a public conveyance, or who shall willfully go into any other locality without a permit of the board of health of that locality, or who shall knowingly and willfully convey any child or irresponsible person affected with any dangerous communicable disease, or the corpse of a person dead from such disease, or who shall, in any way, subject another to danger of contracting one of these diseases. At present there is no statutory provision punishing those traveling from place to place on the cars or in other public conveyance, knowing themselves to be affected with a dangerous communicable disease, and cases have been brought to the notice of the State Board of Health which would be covered by this proposed bill.

A letter was presented from a citizen of Branch County complaining that incompetent practitioners were driven, by the stringent laws of Indiana and other States, into the southern counties of Michigan, and asking the State Board of Health to exert its influence to protect the State from charlatans and quacks. The subject was

discussed by the board and referred to a committee with instructions to draft a proposed bill for presentation to the Legislature.

DIETARY OF STATE INSTITUTIONS.

The secretary stated that replies had been received from seven different State institutions in reply to the request made by the State Board of Health for information concerning dietary. The replies were read at a meeting of the board, and were referred to Dr. Hazlewood for further careful study and report.

POISONING BY TYROTOXICON.

A communication was read from Dr. W. C. West, of Monroe, concerning about twenty cases of cheese-poisoning in that city. Those poisoned "were taken at first with great prostration—a sensation as though they would die. This was followed by vomiting which would relieve them somewhat. The vomiting was very severe in most of the cases, and was followed by diarrhœa. There was pain in the stomach and bowels." All who ate of the cheese were affected.

A sample of the cheese was sent to Professor R. C. Kedzie for analysis, who found that poison present in the sample, and attributed its poisonous effect to tyrotoxicon.

Complaints were made to the board that some health-officers use their official position to injure brother practitioners who report dangerous communicable diseases, by going to a case after the prominent symptoms have disappeared, deciding that it is not the disease reported, and thus bringing upon the physician who reported it the contempt of the family. After considerable discussion, the following resolution was adopted:

Resolved, That it is the opinion of this board, when a case of dangerous communicable disease is reported by a reliable physician, the health-officer should act upon the diagnosis of such physician without question.

COMPENSATION OF HEALTH-OFFICERS.

A card with printed questions was sent to each of 1,055 health-officers of townships, 213 health-officers of villages, 48 health-officers of cities (in all, 1,316 localities) asking for information concerning the compensation of health-officers, work performed by them, etc. Replies were received from 551 townships, 104 villages, and 20 cities—in all 675 localities.

According to the reports, provision is made for an *annual salary* in 111 townships, 54 villages, and 18 cities. The annual salaries provided for average $16.93 for each township, $128.33 for each city, and $26.21 for each village.

HOW WELL DOES PUBLIC OPINION SUSTAIN PUBLIC-HEALTH WORK?

A large majority—444 of the 593 health-officers—stated that they were well sustained; 151 said that they were poorly sustained, and 36 stated that public opinion did not sustain them at all.

SERVICES RENDERED BY THE HEALTH-OFFICERS.

Replies to the question as to services rendered by the health-officer were received from 593 localities. The number of nuisances inspected in all the localities reported was 5,075; the number abated was 3,679. The number of reports made to the State Board of Health was 4,029, and the number of communicable diseases looked after was 5,389. The above numbers do not fully show the amount of service performed, because many health-officers stated that they had inspected and abated nuisances, sent reports to the State Board of Health, and looked after cases of communicable diseases, but had kept no record in either case; therefore the foregoing numerical statements of work performed are too small; and they represent only 593 out of the 1,494 localities in the State.

EXAMINATION OF PLANS FOR A PROPOSED STATE BUILDING.

The plans for a proposed cottage for convalescent insane near the asylum at

Kalamazoo were examined at considerable length, but not very satisfactory results could be reached because of lack of statement of details. Letters explanatory by the medical superintendent, Dr. Palmer, were read by the secretary, and these letters gave more information than did the plans themselves.

The proposed cottage is to accommodate fifty inmates. The plans and letters show that considerable attention has been given to some of the sanitary requirements.

QUARTERLY REPORT OF WORK.

During the second quarter of 1888, the office of the board received information of and took action concerning 27 outbreaks of typhoid fever, 59 outbreaks of diphtheria, and 84 outbreaks of scarlet fever. To the localities where the outbreaks occurred, the usual number of documents on the restriction and prevention of these diseases were sent for distribution to those most interested. The office also received information concerning 91 outbreaks of measles.

THE AMERICAN OTOLOGICAL SOCIETY.

Twenty-first annual meeting was held at Pequot House, New London, Connecticut, July 17, 1888.

The Society was called to order by the President, Dr. J. S. Prout, of Brooklyn, who alluded in his opening address to the loss sustained by the Society in the death of Dr. C. R. Agnew, of New York, and suggested that action be taken.

On motion, Dr. Gorham Bacon and Dr. W. H. Carmalt were appointed to prepare an appropriate minute on the subject.

Dr. W. H. Carmalt presented the report of the Committee of Conference on the Congress of American Physicians and Surgeons.

The report was accepted, and it was decided that when the Society adjourns it adjourn to meet at the Arlington Hotel, Washington, D. C., September 18, 1888, at 11 a. m.

On motion, it was decided that the meeting should be strictly for scientific matters, and should not be regarded as a business meeting; that it should not take the place of the annual meeting.

Two papers by Dr. S. Sexton, of New York, entitled "Periostitis Externa of the Mastoid," and "Some of the Indications for Excision of the Drumhead and Malleus," were read by title,

A paper was read by Dr. C. H. Burnett, of Philadelphia, entitled "A Case of Aural Vertigo (Menière's Disease) Relieved by Excision of the Membrana Tympani and Malleus." The patient was an unmarried woman, thirty-seven years of age, who six years previous had been under treatment for chronic naso-pharyngeal catarrh, and chronic catarrh of the left middle ear, accompanied with impairment of hearing, tinnitus aurium, and a sense of fullness in the affected organ. Treatment of the catarrhal disease of the ear produced little, if any, benefit. After the lapse of six years, the symptoms already named grew worse, and there was superadded marked aural vertigo. The membrana tympani in the line of the malleus handle was found adherent to the promontory, and the consequent retraction of the entire chain of bones was supposed to be the cause of the aural vertigo and probably of the sense of fullness, and of the tinnitus.

The operation of excision of the membrana tympani and the malleus was performed under ether May 21, with immediate relief to the aural vertigo, which before had often been sufficient to cause the patient to hold to a lamp-post for support, and to the sense of pressure and tinnitus, which good result has been maintained to the present time. The hearing was practically unaffected by the operation. The incus was detached from the stapes, but could not be removed, as it slipped into the attic, and grappling for it is not advisable on account of the risk of irritation.

Its removal, furthermore, would have no effect on the result of the operation.

Dr. S. Sexton then exhibited a new portable battery for the storage of electro-motor force, and a new head-lantern for the employment of electric light in surgery. The battery was made at his suggestion. It consists of three cells, and will light a six-candle electric light. The lantern is a modification of that of Trouve, but much lighter, and having a non-conducting base. Such a light is almost necessary in operations on the ear, when ether is used as an anæsthetic. The battery will work continuously for twenty-four hours, and will retain its power for several weeks or months. It may be charged by a dynamo or by twelve gravity cells. When not in use, the storage battery may be kept in connection with the gravity cells.

Dr. A. H. Buck, of New York, read a paper on "Reflex Influences in the Production of Naso-Pharyngeal Catarrh." The object of the paper was to call attention to those comparatively remote exciting causes of naso-pharyngeal catarrh, which act, so far as it is possible to explain their mechanism, through the intervention of the vaso-motor fibres of the sympathetic nerve. Little is known of the direct exciting causes of naso-pharyngeal catarrh. The most common indirect cause is chilling of the surface of the body. According to certain authorities, affections of the teeth should rank next in order of frequency. The author had, however, seen very few cases in which dental disturbance played the part of a promoter of naso-pharyngeal catarrh or of aural disturbance. Some of those indirect causes which he had observed were then enumerated. Irritation of the gastro-intestinal canal is, in not a few instances, a strong exciting cause of naso-pharyngeal catarrh, and of all the aural disturbances growing out of such a catarrh.

Reflex influence, involving the vault of the pharynx and the ear, may emanate from more distant sources.

The author states that he had spoken of these as indirect causes—that is, as factors competent to aggravate a pre-existing but perhaps latent catarrhal disease, but he saw no reason why these reflex influences may not in certain cases play the part of direct exciting causes. He considered it impossible to demonstrate the correctness of this belief, and therefore preferred to adopt the view which assigns to them a less independent rôle.

Dr. Buck then also read "A Contribution to the Anatomy of the Elephant's Ear." The ear was exhibited, and the interesting points indicated. The external auditory canal is embedded in air-containing cells, and is six and a half inches long. The canal at the time of examination was filled with desquamated material. In the middle ear, the handle of the hammer seems to lie in a horizontal plane; it is not vertical, as in the human being. The anterior part of the drum-cavity is completely cut off from the posterior part. The Eustachian tube comes up through a system of air-cells and opens through one of them close to the drum-membrane. Under the floor of the tympanic cavity there are three septa, making stall-like spaces. Two of these are quite long, six or seven inches. The labyrinth and other parts were not exhibited.

A paper by Dr. Huntington Richards, of New York, was then read by Dr. Buck, on "A Case of Polypoid Angioma of The Ear," and one on "A Case of 'False Drum Membrane.'"

Dr. J. B. Emerson, of New York, read a paper on "The Flexible Catheter As a Drainage-Tube—With Cases."

The author cited several cases, exhibiting the use of the flexible catheter as a drainage-tube.

With deeply seated inflammation of the auditory canal or mastoid cells, maintenance of drainage through a fistula is a necessity; and to prevent closure of the fistula, either by granular growth or natural healing, is important.

Dr. Emerson recommends the use of the flexible catheter as generally the best means to employ, and states his reasons to be the comparative comfort and safety, together with convenience of control by both surgeon and patient. The efficiency observed in the use of the flexible catheter was also referred to.

Dr. Charles J. Kipp, of Newark, reported on "Three Cases of Transient Bilateral Horizontal Nystagmus in Connection with Purulent Inflammation of the Middle Ear."

Dr. J. O. Tansley, of New York, exhibited "An Improved Aural Snare."

The snare was devised to overcome an objection to the ordinary Wilde snare—that is, the little jerk and rebound of the instrument when the growth is cut through. The instrument exhibited consists of a small tube through which the wire passes, to be connected with a small bobbin, by the turning of which it is gradually shortened.

A paper by Dr. S. Sexton, of New York, on "Foreign Bodies in the External Auditory Canal," was read by title.

The following officers were elected:

President—Dr. J. S. Prout, of Brooklyn.

Vice-President—Dr. Gorham Bacon, of New York.

Secretary and Treasurer—Dr. J. J. B. Vermyne, of New Bedford, Massachusetts.

Committee on Membership—Dr. A. Mathewson, Dr. D. B. St. John Roosa, and Dr. John Green.

Delegate to Congress of American Physicians and Surgeons—Dr. W. H. Carmalt, of New Haven; *Alternate*, Dr. G. Bacon, of New York.

The Society then adjourned to meet at the Arlington Hotel, Washington, D. C., Tuesday, September 18, 1888.

AMERICAN OPHTHALMOLOGICAL SOCIETY.

The twenty-fourth annual meeting was held at New London, Connecticut, July 18 and 19, 1888.

The President, Dr. W. F. Norris, in the chair.

A memorial of Dr. C. R. Agnew was read by Dr. H. D. Noyes. Committees were appointed to draw up resolutions concerning the death of Dr. E. G. Loring and that of Dr. Joseph Aub.

A CONTRIBUTION TO THE TREATMENT OF MEMBRANOUS OPACITIES OF THE VITREOUS.—Dr. Charles S. Bull, of New York, read a paper which contained histories of fifteen cases of membranous opacities of the vitreous in which he had resorted to the operation first performed by Von Graefe, an account of which was published in 1863. Internal treatment and local applications had no effect on those opacities of the vitreous demanding this operation. According to the nature of the case, he employed the discission needle, the sharp-pointed cataract knife, or a needle with a broader point.

Dr. F. Buller, of Montreal, gave the history of a case of pulsating exophthalmia cured by ligation of the common carotid.

Dr. Swan M. Burnett, of Washington, read a paper giving an analysis of the refraction of 576 healthy human corneæ examined with the ophthalmometer of Joval and Schiotz.

Dr. J. B. Emerson, of New York, read the history of a case of progressive hypermetropic astigmatism.

Dr. E. Jackson, of Philadelphia, reported a case of œdema of the choroid and retina, and also exhibited a new form of cataract knife.

New instruments were presented by Dr. Tansley, consisting of a lachrymal syringe, modified probes for enlarging the lachrymal canal, a clamp to close the entrance to the lacrhymal duct and prevent the passage of atropine solution into the nose and throat, and an improved style.

Aluminium lachrymal probes were shown by Dr. Theobald. Being very smooth and slippery, they give less pain than silver probes, and do not oxidize.

Dr. Risley, Dr. Theobald, and Dr. Noyes

gave the results of some examinations as to the size of the lachrymal canal in the dry skull, and the lesson drawn was that, inasmuch as the size of the canal varied much in different subjects, and perhaps also on the two sides in the same subject, one could be governed in the use of probes only by actual trial in each case.

SYMPTOMATIC MYOPIA.—Dr. Mittendorf said that the fact that myopia as a symptom of certain affections of the eye was so little appreciated had led him to prepare this paper. Traumatism might give rise to symptomatic myopia, but the condition occurred more commonly with some disease. In some rare cases it had been caused by dislocation of the lense forward.

HYSTERICAL BLINDNESS IN THE MALE.—Dr. W. O. Moore, of New York, stated in a paper that Briquet had found, out of one thousand cases of hysteria, fifty in males, while other authors had found the proportion of males to females suffering from the disease as one to fifteen. From 1875 to 1885, in France, no fewer than five theses on hysteria in the male had appeared. In males the symptoms lasted longer than in females, and they were more likely to occur in weak and effeminate subjects.

FOREIGN MEDICAL SOCIETIES.

CLINICAL SOCIETY OF LONDON.

CONCLUSIONS OF THE MYXŒDEMA COMMITTEE.

Dr. Ord, as the chairman of the myxœdema committee read the following conclusions. He admitted that the time taken up in the investigation was protracted, but he claimed that when the results were known the time would not appear out of proportion.

1. That myxœdema is a well-defined disease.

2. That the disease affects women much more frequently than men, and that the subjects are, for the most part, of middle age.

3. That clinical and pathological observations respectively indicate, in a decisive way, that the one condition, common to all cases, is destructive change of the thyroid gland.

4. That the most common form of destructive change of the thyroid gland consists in the substitution of a delicate fibrous tissue for the proper glandular structure.

5. That interstitial development of fibrous tissue is also observed very frequently in the skin, and with much less frequency in the viscera, the appearances presented by this tissue being suggestive of an irritative or inflammatory process.

6. That pathological observation, while showing cause for the changes in the skin during life, for the falling off of the hair and the loss of the teeth, for the increased bulk of the body, as due to the excess of subcutaneous fat, affords no explanation of the affections of speech, movement, sensation, consciousness, and intellect, which form a large part of the symptoms of the disease.

7. That chemical examination of the comparatively few available cases fails to show the general existence of an excess of mucin in the tissues adequately corresponding to the amount recorded in the first observations, but that this discrepancy may be, in part, attributed to the fact that tumefaction of the integuments, although generally characteristic of myxœdema, varies considerably throughout the course of the disease, and often disappears shortly before death.

8. That, in experiments made upon animals, particularly on monkeys, symptoms resembling, in a very close and remarkable way, those of myxœdema have followed complete removal of the thyroid gland, performed under antiseptic precautions, and with, as far as could be ascertained, no injury to the adjacent nerves, or to the trachea.

9. That, in such experimental cases, a large excess of mucin has been found to be

present in the skin, fibrous tissues, blood, and salivary glands; in particular, the parotid gland, normally containing no mucin, has presented that substance in quantities corresponding to what would be ordinarily found in the submaxillary gland.

10. That the full analysis of the results of the removal of the thyroid gland in man demonstrates in an important proportion of the cases the fact of the subsequent development of symptoms exactly corresponding with those of myxœdema.

11. That, in no inconsiderable number of cases, the operation has not been followed by such symptoms, the apparent immunity being in many cases probably due to the presence and subsequent development of accessory thyroid glands, or accidentally incomplete removal, or to insufficiently long observation of the patients after operation.

12. That whereas injury to the trachea, atrophy of the trachea, injury of the recurrent laryngeal nerves, injury of the cervical sympathetic, and endemic influences have been, by various observers, supposed to be the true causes of experimental or of operative myxœdema (cachexia strumipriva), there is, in the first place, no evidence to show that, of the numerous and various surgical operations performed on the neck and throat, involving various organs and tissues, none, save those in which the thyroid gland has been removed, have been followed by the symptoms under consideration; that in many of the operations on men, and in most, if not all, of the experimental operations made by Professor Horsley on monkeys and other animals, the procedure avoided all injury of surrounding parts, and was perfectly aseptic; that myxœdema has followed removal of the thyroid gland in persons neither living in, nor having lived in, localities the seat of endemic cretinism; that, therefore, the positive evidence on this point outweighs vastly the negative, and that it appears strongly proved that myxœdema is frequently produced by the removal, as well as by the pathological destruction, of the thyroid gland.

13. That whereas, according to clause 2, in myxœdema women are much more numerously affected than men, in the operative form of myxœdema no important difference of the same kind is observed.

14. That a general review of symptoms and pathology leads to the belief that the disease described under the name of myxœdema, as observed in adults, is practically the same disease as that named sporadic cretinism, when affecting children; that myxœdema is probably identical with cachexia strumipriva; and that a very close affinity exists between myxœdema and endemic cretinism.

15. That while these several conditions appear, in the main, to depend on, or to be associated with, destruction or loss of the function of the thyroid gland, the ultimate cause of such destruction or loss is at present not evident.

The president (Dr. Broadbent) congratulated the society on the completion of this important investigation, and said their thanks were due to the committee for the enormous work and to the zeal and abilities which had enabled them to present this summary of the report, and practically the report itself, during the present session. When they heard the conclusions and imagined the enormous amount of investigation and research and inquiry which was embodied there, four years was a comparatively short period. The report would make the present session memorable. It reflected the greatest possible credit upon the society. It was the most important work yet carried out in its name. Already the labors of the committee had served to stimulate the carrying out of similar investigations in Germany. He then concluded with a graceful tribute to the way in which Dr. Ord's name was indissolubly bound up with the history of myxœdema.—*Medical Press and Circular.*

THE MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

CLINICAL REMARKS UPON THE OPERATIVE SURGERY OF THE MALE BLADDER.

I.—*Cystotomy in Certain Cases of Enlarged Prostate with Persistent and Aggravated Irritability of the Bladder.*—Professor Thomas Annandale said: The cases referred to under this head are those in which all ordinary treatment, including careful catheterism, washing out the bladder, and general remedies fail to relieve the almost constant distressing symptoms of pain, spasm, and desire to pass urine.

Various operative procedures have from time to time been suggested for the treatment of such symptoms, all of these having the object of establishing an artificial opening communicating with the bladder, and of allowing a metal or rubber tube to be inserted, so as to drain off the urine.

Sir H. Thompson, in the *Lancet* for 1875, vol. i, suggested that in certain of these cases the bladder should be punctured above the pubes, and that a tube should be permanently retained, and he described a special instrument for the purpose. Mr. Thomas Smith, in St. Bartholomew's Hospital Reports (1881), also advocates this proceeding. Mr. Reginald Harrison, in *Lancet*, 1886, vol. i, advocates a perineal cystotomy, with the introduction of a tube in this situation. Most surgeons are, I think, now of opinion that the perineal opening is the best in the large majority of cases in which this operation is required. Such is certainly my opinion, and my reasons are, (1) that the bladder is better drained from this opening; (2) that the incision through the prostate sometimes has a beneficial effect upon the enlarged organ. Believing in the advantages of this proceeding in certain cases, my endeavor has been to improve the retained tube so as to permit of its permanent use, when required, in a form efficient and comfortable to the patient, and after several trials the apparatus now to be described appears to me to carry out these principles. An india-rubber catheter of full size having been cut short, so that its rounded end will lie in the bladder and its cut extremity project half an inch from the perineal wound, has fitted into the projecting end a short tube of hard vulcanite half an inch in length. This allows a silk or other thread with two short loops to be firmly fastened around the catheter without interfering with its canal, and by means of these loops the cathether is secured in position in the usual way. To the other end of the vulcanite tube any convenient length of india-rubber tubing can be fixed, and by placing a small stopcock on the tubing the bladder can be readily emptied at any time by turning on the tap.

In illustration of this treatment I give brief notes of the two following cases:

CASE I.—Mr. S., æt. 70, was first seen in consultation with Dr. J. Jamieson in July, 1886, on account of prostatic retention, with cystitis and great irritability of the bladder. The patient being unable to empty his bladder, regular catheterism, with washing out the bladder and general treatment, were advised. This treatment was carefully carried out by Dr. Jamieson, and I saw him occasionally in consultation. As the patient's symptoms were only temporarily removed, and as they became so much aggravated, I performed perineal cystotomy upon the 8th January, 1887. The result was most satisfactory, and a few months after the operation he was able to go about wearing the tube which I have described. Up to this date (May, 1888) he continues well, and Dr. Jamieson writes me that "from a life of misery he has passed to one of comparative comfort."

CASE II.—Mr. —, æt. 60, was seen with Dr. Dunsmure in April, 1887. His symptoms were very similar to those affecting the patient in Case I. He had been confined to bed for several months, and various forms of treatment carefully tried without giving him relief. Cystotomy was

performed upon the 9th of May, 1887, and after a few weeks the tube, as described, was introduced. Since that date the patient has worn the tube and is able to go about and perform his duties.

The result obtained in these two cases is, I think, most encouraging, and it will, I hope, assist in establishing this operation as an efficient means of relief in suitable cases.

Very recently it has been suggested by Mr. McGill that a special cystotomy may be employed for the removal of a portion or portions of an enlarged prostate with a view of taking away an obstruction to the natural passage of the urine. It has been long known that projecting portions of an enlarged prostate may be safely removed. More than twenty-five years ago, when assisting the late Mr. Syme to perform lateral lithotomy upon an old gentleman, a large portion of the prostate was accidentally caught between the blades of the forceps and torn away. This patient made an excellent recovery. Similar cases have been recorded, and I think that when an exploratory incision has demonstrated a projecting enlargement of the prostate into the cavity of the bladder, which is interfering with proper micturition, the removal of this portion is a proper and justifiable proceeding.

II.—*Cystotomy in Certain Cases of Acute Retention of Urine, the Result of Enlarged Prostate.*—When acute retention of urine takes place in patients suffering from enlargement of the prostate, it may be temporarily and easily relieved, more especially if it is early and carefully treated, but the condition is not unfrequently tedious in its progress and complicated by cystitis and general irritative disturbance and fever, more particularly when treatment has been delayed or unsuccessfully employed. When the required use of the catheter irritates, or when its employment is unsatisfactory owing to the difficulty of passing it into the bladder, to the want of experience on the part of the medical attendant, or to the circumstance that the patient is distant from proper surgical aid, I am of opinion that a perineal cystotomy is the most likely means to give the patient efficient relief. No doubt in urgent cases supra-pubic aspiration or puncture is a valuable means of relieving the retention; but this proceeding can only be temporary, even if frequently repeated, and experience of it has shown that it is not without risks. On several occasions, when called to distant parts of the country to consult in regard to difficult cases of prostatic retention, I have advised and successfully performed perineal cystotomy, believing that this treatment was best for the comfort of both patient and his medical attendant.

III. — *Cystotomy for the Removal of Tumors of the Bladder.*—The experience of this operation has already proved that in favorable cases—that is, in cases of tumors having little or no malignant tendencies -- encouraging results are obtained. It cannot yet be said that the exact diagnosis of the presence of a tumor in the bladder can always be made, nor can the exact nature of the tumor, if present, be always determined by mere symptoms, microscopic examination of the urine, or external examination, but an exploratory incision will in all cases of doubt decide the question.

From my experience in connection with operations for the removal of bladder tumors I would wish to express an opinion as to the best form of cystotomy in such cases. I have no hesitation in saying that tumors of the bladder can be most accurately and thoroughly removed by making both a supra-pubic and perineal incision. If the forceps or other extracting instrument is introduced through the perineal wound and their blades, guided by one or more fingers, passed into the bladder through the supra-pubic wound, an accurate removal of the growth is, in my opinion, most thoroughly obtained, more particularly in the case of broad-based tumors. It is quite possible to remove a tumor of

the bladder through either a perineal or supra-pubic opening, but I believe that by means of the two openings a greater accuracy of removal is possible.

My usual practice is to first make a supra-pubic cystotomy, and then a central perineal one, in all cases in which the diagnosis of the presence of a removable tumor is well determined; but when the diagnosis is doubtful, I first make a central perineal exploratory incision, and then, if required, follow this up by a supra-pubic cystotomy.

IV.—*Cystotomy for Persistent Irritability of the Bladder Unrelieved by Ordinary Careful Treatment.*—Cases of this nature are not uncommon, and they may or may not be associated with symptoms of cystitis. When all ordinary treatment fails to relieve, perineal cystotomy gives, in my opinion, the best chance of curing or relieving the condition, and it is from my experience much more effective than any drainage of the bladder by the retention of a catheter or tube passed along the urethra. In some of these cases little or no change in the bladder structures can be detected; but in others I have found superficial ulceration or a velvety condition of the mucous membrane. Needless to say that before practicing cystotomy in any case of this kind all sources which are known to produce symptoms of irritability of the bladder should be carefully investigated.

Note.—The recent suggestion that the endoscope may be employed by passing it through a perineal wound, such as is made in perineal cystotomy, is, in my opinion, a most valuable one, and is likely to much assist the correct diagnosis of obscure bladder conditions.

EMPYÆMA OF THE SUPERIOR MAXILLARY ANTRUM WITH ONLY NASAL SYMPTOMS.

P. M'Bride, M. D., F. R. C. P. Ed., F. R. S. E., Surgeon to the Ear and Throat Department, Royal Infirmary, and Lecturer on Diseases of the Ear and Throat, Edinburgh School of Medicine, read the following paper:

Among both surgeons and specialists there has been, and I may even say there still is, a tendency to regard suppuration of the lining membrane of the maxillary antrum as invariably attended with pain, swelling, and distention of the osseous walls of the cavity. The condition to which I propose now to direct attention is associated with none of these symptoms, and the patients usually come to the surgeon complaining only of a constant or periodic discharge of pus from the nose. Sometimes the secretion is offensive, and then both its smell and taste may be perceived by the sufferer; in other instances, however, it is free from fœtor. Inasmuch as one antrum only is commonly affected, the discharge is usually found to come from one nostril—although it must not be forgotten that as the two nostrils communicate posteriorly any large quantity of secretion finding its way into one may in part escape by the other, more especially while blowing the nose. I have laid some stress upon this point because the unilateral character of the discharge is often only discovered after careful questioning.

Very often, too, the patient has never observed that the quantity of discharge is altered by changing the position of the head, although I believe that a careful rhinoscopic examination will commonly prove that this phenomenon is present. In most instances inquiry will elicit a history of faceache, sometimes extremely slight, or at least of a period of discomfort in the region of the cheek; but this is frequently only discovered by strict questioning, because to the patients there seems to be no connection between the two conditions.

For the most part there is neither pain nor discomfort when the case is examined, because the suppuration has become chronic, and the pus discharges freely through the natural orifice (or orifices) into the nose. Fraenkel,* however, states that in not a few cases frontal headache is complained of, and I have seen the same

*"Berlin Klin. Wochens.," No. 16, 1887.

symptom in one of my own cases. I was at one time inclined to regard this symptom as a reflex neuralgia, but am now more disposed to adopt the explanation suggested by Killian.* It will be remembered that the normal opening of the antrum into the nose is close to that of the frontal sinus. We shall presently—when discussing the objective signs—see that the nostril corresponding to the affected side usually shows swelling of the mucous membrane. As a sequence of this tumefaction closure of the communication between the frontal sinus and the nose occurs with the natural result, that as the contained air is absorbed, the frontal cavity is placed under abmormal physical conditions. It is even conceivable that in this way secondary inflammatory changes and exudation might result in the frontal sinus. The possibility of forehead pain and tenderness being due to antral disease is a matter of great importance, as its presence might easily lead to the diagnosis of suppuration in the frontal or ethmoidal cells.

No doubt the class of cases we are considering have been long since recognized by individual surgeons, and probably also by dentists. This may be gathered by a careful perusal of such authors as Erichsen,† Heath,‡ Lefferts,§ Scech,‖ Salter,¶ and others.

Neither in the works just referred to, however, nor in others, have I found this subject treated of with the care and consideration which it merits. Thus, Moldenhauer,** who has written the most recent and one of the best text-books on the nose, describes under the designation "Disease of the Osseous Portion of the Nose," a class of cases in which, despite his reference to Ziem's paper, he seems to assume that the nasal discharge is due to limited caries. Of the six cases there referred to, I believe, from the author's observations, that in every one the symptoms must have been due to chronic suppuration of the lining membrane of the antrum of Highmore. I have stated these facts to show that until quite recently, suppuration of the antrum without retention of pus was in many cases overlooked. To Ziem,* therefore, we must give the credit of first directing the attention of specialists to the important fact that a discharge of pus from the nose is often due to suppuration within the antrum. It seems to me, however, that we cannot hold this authority guiltless of extreme zeal for the neglected cause which he espoused. Yet, notwithstanding this, he was able to show a large number of successful results, although he seems to have opened the antrum in almost every case of purulent discharge from the nose for which he was consulted. The most scientific contribution, however, on this question is from the pen of B. Fraenkel.† As he very properly points out, the pus in these cases can be seen to issue from the region of the hiatus semilunaris. If then the nose be thoroughly cleansed, and the secretion be seen soon afterwards to appear in the middle meatus, we may suspect antral mischief but, as Fraenkel remarks, "Not all pus that is poured into the middle meatus through the hiatus comes from the antrum." For it may also proceed from the frontal sinus. In order to differentiate the two conditions, Fraenkel carefully cleanses the nostril and makes the patient sit with his head down, a position which would render drainage from the frontal sinus into the nose impossible. If, after this, more pus be found, he concludes that the maxillary sinus is at fault.

Let us now take a final glance at the clinical feature of the affection we are dis-

*"Monatsschrift für Ohrenheilkunde," etc., Oct. and Nov. 1887.

†"Science and Art of Surgery," 1887, vol. ii., p. 474.

‡"International Encyc. of Surgery" (Ashhurst), vol. v.

§ Ibid,

‖ "Diseases of the Mouth, Nose, and Throat." Translated by Blaikie, 1886.

¶"Dental Pathology and Surgery," 1874.

**"Krankeiten der Nasenhöhlen," etc., 1886.

*"Monatsschrift für Ohrenheilkunde" (Feb., March, April, 1886).

†"Berlin Klin. Wochens.," 16, 1888,

cussing. The patient complains of a unilateral discharge of pus, which sometimes trickles from the nose in a continuous stream, and may be fœtid or sweet; in some persons the discharge seems to occur periodically. Careful examination of the affected nostril shows that the secretion comes from a point just below the anterior extremity of the middle turbinated body; sometimes, however, it is sufficiently copious to cover the posterior surface of the palate, posterior end of the inferior turbinated body, etc. If the nostrils be syringed out, and the drop of pus wiped away from the middle meatus, and the head thrown forward with the forehead down, the secretion is seen, on examination undertaken immediately afterwards, to be increased in quantity. Anterior rhinoscopy often shows the mucous covering of the inferior and middle turbinated bodies to be hypertrophied, or at all events in a state of erectile swelling. This last named condition can, of course, be temporarily overcome by the application of cocaine or menthol—a proceeding which is often necessary to obtain a better view of the parts.

Posterior rhinoscopy is merely useful in excluding other conditions. The diagnosis of the form of empyæma of the antrum under discussion is arrived at by a process of exclusion. The frontal sinus is eliminated by Fraenkel's method, and besides this cavity is rarely affected by itself. This, Zuckerkandl,* whose work on the normal and pathological anatomy of the nose is probably the most complete in existence, has never met with isolated inflammation of the frontal sinus. A careful rhinoscopic examination will exclude all other possible causes of unilateral nasal discharge, *e. g.*, the presence of a foreign body or rhinolith, ulceration, inflammation of the bursa pharyngea, ozæna, caries, etc.

There is, however, one condition which deserves more than passing notice, and which was first pointed out to me by Dr. Cotterill, in a case where he operated at my suggestion, viz., a marked redness of the gum corresponding to the affected antrum. This was found in the last case but one which I have examined; in the last the same phenomenon was present. I am not aware that this condition has been so far observed by the few authors who have written on empyæma of the antrum without the usually described symptoms. As to the cause of this form of antral affection, I think by far the most common is to be sought in the presence of decayed upper teeth, usually the bicuspids or first molar. I have met with one case, however, in which the antral inflammation was set up by either long continued nasal catarrh, or by douches used for its cure.

In conclusion, I shall briefly record two cases which seem to me fairly typical.

Mr. C. consulted me in August, 1887, and has had a discharge of matter from the left nostril for five years or so, and all remedies so far recommended having proved useless.

Objective Examination—Post-Rhinoscopy.—Parts fairly healthy, except some thickening of posterior extremities of the inferior turbinated bodies, especially on left side.

Anterior Rhinoscopy.—Right nostril almost normal; left, pus coming from anterior part of middle meatus, increased by holding head over to the right. No pain or swelling over antrum, but has had a gumboil repeatedly over the stump of the second bicuspid, where there is now a sinus. The tooth was extracted on my recommendation by a dentist (Mr. Watson), and the antrum opened through the socket, a proceeding which gave escape to a considerable quantity of pus. Systematic irrigation, carried out by the patient, freed him from his troublesome and distressing affection.

Mr. M. consulted me 18th December, 1887. For nine years patient has used a nasal douche as part of his toilet; this was ordered on account of an ear affec-

*"Normal und Path. Anat. der Nasenhöhle," etc., p. 168.

tion at that time; occasionally during its employment a little pellet came away. He now, since July, complains of fœtid discharge from the right nostril. There was no history of pain in the antrum; but once during a railway journey he felt a curious drawn feeling in his face. He thought little of this, and it immediately passed off. In this connection it may be stated that the patient is extremely neurotic and would probably feel pain acutely.

Nasal Condition. — Slight tenderness over right cheek on firm pressure; teeth quite perfect; discharge increased by bending head over to left and also keeping forehead down.

Post-Nares.—Some purulent discharge; no ulcer or other condition to account for its presence.

Anterior Nares.—Left nostril some catarrh; no pus. Right nostril, inferior turbinated body in a state of erectile swelling, which subsides under cocaine; pus coming from middle meatus, and showing pulsation.

Nostrils.—Blown separately, right yields copious fœtid purulent discharge; from the left there comes only serous sweet discharge. No tenderness of the teeth; congestion of the upper gum and the right of the middle line; no bulging anywhere.

On the 22d December the patient was again examined, in conjunction with Mr. Duncan, and on this occasion the second bicuspid and first molar on the affected side were found to be loosened, whereas four days previously they were quite normal. Mr. Duncan after this opened the antrum through the alveolar process, and let out a quantity of fœtid pus. The case is still under treatment, but under continued irrigation, with boracic lotion and free drainage, is sure to do well. I have detailed this case at length, in order to illustrate the fact that the absence of bad teeth is no guarantee against antral mischief. As I have before said, antral empyæma is commonly unilateral. To make this paper complete, however, it is necessary to state that in a few cases Ziem found the affection to exist on both sides. So far I have not met with such a case, but the diagnosis could, no doubt, be arrived at without difficulty.

In conclusion, it remains to refer briefly to the treatment. I do not think that Stoerk's suggestion to treat these cases by the introduction of a tube into, or, if this be impossible, up to the natural opening between the antrum and the nose, and thus to irrigate the cavity, is at all advantageous. Manifestly, this line of treatment, even if in the end successful, must entail so much time and trouble as to weary the average patient. No doubt the establishment of a counter-opening is more scientific and satisfactory. Such a counter-opening may be made through the socket of a tooth, through the alveolar process, or finally through the outer wall of the nose near its floor, as suggested recently by Mikulicz. After a free drain has been established, irrigation of the antrum must be undertaken, and continued until the case is cured. For injection, such fluids as boracic lotion, or water containing small quantities of iodine or chloride of zinc, may be used, according to the indications afforded by each particular case. Whether the insufflation of powders in addition (boracic acid, iodoform. etc.) would prove more rapidly effectual, I am not yet prepared to say.

DISCUSSION.

The PRESIDENT said he could corroborate much of what had been communicated by Dr. M'Bride. In many of these cases there was no pain, and the patient had no suspicion of antral disease. Sometimes the frontal, ethmoidal, and the sphenoidal sinuses might contribute as a means of keeping up the nasal discharge, but none of the sinuses were subject to the same irritation or liability to morbid conditions as the antrum. He believed that when carious or loose, or in any way suspicious teeth existed, with symptoms of an ozænic ten-

dency, they should be extracted. The antrum retained its secretion much more than the other sinuses. Its floor was really lower than the palate, and was deep behind the posterior bicuspid, while the opening into the meatus was near its roof. In this way he had no doubt that in these antral cases, by its retention the mucus or mucopus became very offensive. When these cases required opening, he thought it was best done above the external alveolar process. Such an opening closed much easier than one made through the socket of a tooth which often healed with difficulty, a sinus or fistulous opening continuing long after it was necessary. Opening the antrum was not required in every case. Where no obstruction or distention existed, he had seen removal of the offending teeth followed by disappearance of all the symptoms. In some jaws the antrum was not easily opened from the outside.

Professor ANNANDALE considered that the most important and practical pointof Dr. M'Bride's paper was that such cases were often not discovered. He was quite willing to admit that improved rhinoscopic examinations might be an assistance in their diagnosis, but he was inclined to think, from his surgical experience, that there were always local symptoms which pointed to the presence of pus in the antral cavity. His experience was that if there was a discharge from one nasal cavity, the antrum on that side should be carefully examined, and invariably he had found that a practical surgeon accustomed to examine carefully would be able to find some tenderness or slight enlargement, showing something wrong with the antrum. The last case he saw was that of a young gentleman, who had undergone a variety of treatment for a nasal dischage without curative result. He found slight tenderness, and opened into the antrum, and was rewarded by finding pus. He was strongly of opinion that the best treatment was to open into the cavity above the alveolar margin. If there were diseased or loose teeth, the fangs of which were causing irritation, it was well to remove them, but his experience was that the opening above gave better and quicker results as regards cure. He found a considerable difference in regard to the size and even the position of the antrum. In some cases he had had to puncture very near to the floor of the orbit to effect an opening.

Dr. HORSLEY asked if Dr. M'Bride had any experience as to which ot the various openings recommended, through the socket of a tooth, the external alveolar process, or through the nose, as practiced by the German surgeons, gave the best result?

Dr. COTTERILL believed that the best plan was to attack the condition from the outside, the alveolar, not the nasal surface. The opening into the antrum would be on too high a level if made from the inside. Some cases treated by the internal opening were reported as cures in some of the medical journals a short time ago, but without sufficient details to enable one to judge. In the last case he had operated on, there was no enlargement and only slight tenderness on pressure. He made the opening through the canine fossa. The teeth had been removed some time before, and the sockets filled up, and an opening through them would have been more difficult He had the cavity syringed out twice a day through a glass drainage-tube covered with rubber at the end. This was done for a fortnight till pus ceased to appear. Five days after removal of the tube the cavity had filled up again. It was reopened, the tube reinserted, and left in for about three weeks with a successful result.

Dr. AITKEN mentioned a case in which there was no difficulty about the diagnosis. The pus had made its way through the hard palate, and gave rise to two swellings in the roof of the mouth. Behind these swellings was a small ivory exostosis. The first attempt to open into the cavity was made by an endeavor to extract a stump, thought to be the canine, but owing to the pain, and to the fact that the antral wall was so thin, the antrum was opened

above the alveolar margin. Immediately that was done the stump dropped out, showing the considerable part the atmospheric pressure plays in maintaining the teeth in their sockets. A drainage tube was kept in for about ten days, and the cavity was washed out with an antiseptic solution introduced by means of a Eustachian catheter attached to a syringe. The case was mentioned to show the great importance of free drainage and perfect asepticism.

Dr. M'BRIDE thought Professor Annandale was inclined to criticise the value of the rhinoscope in those cases on the ground that the experienced surgeon would find external evidence of the presence of pus in the antrum. But he had shown that in them there need be no bulging, no swelling, no pain, no tension, though there might be some congestion of the gum, and in all but one of his cases there had been diseased teeth. Unilateral discharge was not sufficient evidence of antral affection, inasmuch as it might be due to syphilis, rhinoliths, foreign bodies, or other causes. He thought that in many cases the arch of the palate might be taken as a guide to the size and position of the antrum.

The PRESIDENT said the antrum varied very much in its capacity, shape, and position in different subjects and at different periods of life. Where the arch of the palate was high it was very much more out of reach. It could not well be opened through the socket of the canine tooth, as its limit anteriorly was about the second bicuspid. It did not seem, however, to be what might be called antral teeth alone that were connected with this affection, as removal of diseased incisors had been of marked benefit in some cases, probably by the removal of diffuse irritation throughout the superior maxilla.

Mr. A. G. MILLER said he had once suffered from an acute abscess of the right antrum. He got great relief from the use of warm fomentations, and found that when he lay on his left side he was relieved of pain, and the matter trickled away slowly and intermittently. He cured himself by lying in bed in this position for two or three days. He thought that something of the kind might be tried in chronic cases along with antiseptic irrigation of the nares.—*Edinburgh Medical Journal.*

THE BERLIN MEDICAL SOCIETY.

THE TREATMENT OF GALL STONES.

Dr. ROSENBERG related his experiences in the treatment of gall-stones, by olive oil, as recently recommended from America. A patient suffering from marked biliary colic, that had continued for five years, and had proved refractory in spite of all treatment, including a "Trinkkur" in Carlsbad, and in whom the pain was very acute, was given a dose of 100 grammes of olive oil (about 3 ozs.) at night. In the morning there were found in the stool three concretions, one the size of a grain of linseed, the other two smaller. Some days later a second dose was given of 180 grammes, and in the stool that followed 180 concretions were found, varying in size from a pin head to a hazel nut, and after a third dose 243 stones. The patient's troubles soon after this began to diminish, but they did not entirely disappear. She took in all, in five doses, 820 grms., of olive oil, and 629 stones were counted in the evacuations that followed. The gall bladder, which before was the size of the fist and projected beyond the edge of the liver, diminished so far that it could be no longer palpated. It was assumed that the oil did not act by exciting peristalsis of the intestines, but by passing directly into the gall bladder and softening the contents. Vomiting only once resulted from the administration.

After Dr. Sonnenburg had shown a case of osteo-sarcoma of the femur,

Dr. CASPER introduced the subject of the Radical Cure of Prostatic Enlargement and Tumors by Electrolysis. He remarked at the commencement that the treat-

ment that had hitherto received the sanction of the most distinguished authorities, Thompson, Guyon, Dittel, and Socin, was merely palliative, although such treatment had been acknowledged to be powerless in arresting the progress of the disease. Attempts had been made in various directions, such as extirpation or crushing of the excrescence from the urethra, injection of iodine or carbolic acid from the rectum, excision by the galvano-cautery from the urethra, or diminution of the mass by ignipuncture from the rectum. Again, the gland had been removed wholly or in part by the high operation. Although more recently such distinguished surgeons as Thompson, von Langenbeck, and Benno-Schmidt, had expressed the opinion that in suitable cases prostatectomy should be done in the future, the speaker was of opinion that a less formidable procedure should first be given a trial. Such a procedure he believed he had found in electrolysis. Since this method of treating tumors was first introduced in 1864 by Nélaton, it had been successfully employed by others. As the decomposed constituents of the prostatic tumor could not make their exit externally, but must of necessity be removed by absorption into the tissues, he had performed experiments on animals with a view of ascertaining whether such absorption entailed any dangers as regarded embolism or otherwise. He treated four rabbits by passing the negative electrode, with cutaneous portion insulated, into a mass of muscle, and continued a current of 15 to 20 milliamperes for 10 to 15 minutes. No sign of embolism followed. The testicles of dogs were treated in the same way, and after the lapse of a year the animals were perfectly healthy, except that the testicles were reduced to a small residuum. He then proceeded to carry out the treatment on men. The patient was placed on the side, the bowel washed out with a 1-1000th solution of sublimate, and the external electrode, 480 ctm. square, placed on the abdomen. The internal electrode, properly guarded, was then passed to the spot selected for puncture, the mucous membrane smoothed out and inserted in the direction desired. The current was then turned on, gradually increasing from 10 to 25 milliamperes; after the lapse of five minutes the needle was partially withdrawn, and passed in another direction, and then after another five minutes in another, so that the sitting altogether lasted fifteen minutes. The pain was quite "nominal"; the current caused a slight burning and pricking in the penis. The application was repeated at intervals, twenty or more times. Retention of urine and bladder irritation were simultaneously treated by the classical methods. Four cases were thus treated, and of this number two were much improved both subjectively and objectively. In the third case a slight improvement took place; the fourth was no better, and in consequence of the insulating material of the electrode getting worn a vesico-rectal fistula resulted, which the author, however, claimed to have been of life-saving service to the patient. In the two cases that were improved the prostate distinctly shriveled up, the residuum of urine after micturition was reduced from 140 or 300 cctm., to 20 or 40 cctm., and the urine only required to be passed every three or four hours, so that a fair night's sleep became once more possible. Pain during micturition also ceased, and the general condition became much better. *Résumé:* The operation was free from danger *quoad oitam.* The danger of a fistulous opening remaining might be excluded. In cases not too far advanced improvement might be expected. Four groups of cases afforded no prospect of improvement by electrolysis. First, those in which the prostate was enlarged rather in thickness than in length or breadth, in which a constant residuum of urine was left after micturition. Second, cases in which immoderate dilatation of the bladder had long existed, so that it did not properly contract even when reduction had been affected in the

size of the prostate. Third, cases of so-called concentrically hypertrophied bladder, where the hypertrophy of the bladder walls was so great that the viscus could scarcely act as a container of urine at all. Fourth, those cases in which the hypertrophy of the prostate was so small that it could not be detected from the rectum. Here the case was one rather of a growth at the neck of the bladder, that closed the opening like a valve, and could not well be reached from the rectum. Finally, those cases were to be excluded in which the symptoms, though similar to those of enlargement of the prostate, were due to other causes. In the majority of cases of prostatic enlargement he was convinced that electrolytic treatment would reduce the size of the organ and obviate the dreaded consequences entailed by the condition.

Dr. FURSTENHEIM agreed with the speaker that nothing could be expected of electrolysis in cases in which retention of urine was always present after micturition. Where there was incomplete paralysis, a certain atony and insufficiency of bladder power, the case was different, benefit might reasonably be expected. He recommended the use of the speculum for introducing the needle, so that the "disagreeable accident" of puncture of the numerous hæmorrhoidal veins present in old people, might be avoided.

Dr. VON BERGMANN believed more in digital exploration than in determining the amount of hypertrophy by the measure of the residuum of urine. Patients that came into the clinic with prostatic enlargement, and had their bladders washed out twice a day always improved in that respect. It did not depend entirely on the hypertrophy, but on the other disturbances that were relieved by treatment.

In reply, Dr. CASPER said that there could be no doubt as to the diminution in size of the prostate by electrolysis; this could always be attained. He believed that the residuum of urine left in the bladder was the only reliable measure that gave a constant result. The dangers of the electrolytic operation were not very great, as in the four cases the rectum was punctured more than forty times, and all the four patients were rejoicing in good health.

FOREIGN CORRESPONDENCE.

THE FESTIVAL OF THE EIGHT HUNDREDTH ANNIVERSARY OF THE UNIVERSITY OF BOLOGNA.

Mr. EDITOR: Bologna, the great metropolis of Italian studies, has celebrated the eight hundredth anniversary of the foundation of her famous university in the presence of the royal family and of representatives of the learned of every nation. Never before was seen such a reunion of famous talent as that of the 12th of June, 1888, in Bologna. It is this circumstance which gives to the festival such universal interest. To make it such the rapid means of communication which we possess in our day have contributed in a special way, these being the result of many of the scientific studies which eight hundred years ago, in the long and historic night of human thought, Bologna had awakened and promoted, during which time Italy predominated over the world in science, letters, and arts, as she had done in arms during the Roman epoch.

How brilliantly shone the star of the Athenæum of Bologna where Irnerius, first, then Bulgar, Gregorius, Accurtius, and many other champions of free thought taught is told by the histories of the schools of Paris and Padua, and many others which later on rose to celebrity. From Hungary, from Germany, and from France pupils came to hear lectures at Bologna, although the means of conveyance were of the most meagre character, strikingly in contrast with the marvelous celerity of communication which brought to Bologna teachers and students from France, Germany, England, Spain, Switzerland, Roumania, Austria, Hungary, Greece, Belgium,

Russia, Portugal, and United States of America.

The University of Bologna is the most important one of Italy. It stands third in the number of its students in the list of twenty-one universities which Italy possesses, Naples having 4,083 students, Turin 2,102, and Bologna 1,338.

The exact date of the origin of Bologna's university is really unknown. It is supposed that Emperor Theodosius was the founder; some attribute this honor to St. Petronius, while others give the honor to Irnerius, who from the documents extant must be admitted to have been the oldest teacher. Although it is thought that the year 1088 is the exact date of her origin, it is said there are documents in existence which tend to prove that it existed many years before. Others fix the date in 1111. At any rate, the University of Bologna is the oldest in the world. The approximate dates of foundation of some of the celebrated universities of Europe are as follows:

Bologna, Italy, 1088 (?); Paris, France, 1230; Valencia, Spain, 1209; Naples, Italy, 1224; Padua, Italy, 1228; Rome, Italy, 1245; Oxford, England, 1249 (?); Cambridge, England, 1254 (?); Montpellier, France, 1284; Pisa, Italy, 1343; Prague, Bohemia, 1340; Pavia, Italy, 1360; Vienna, Austria, 1365; Heidelberg, Germany, 1386; Cambridge, United States, 1636; Berlin, Germany, 1810.

In those times there were no buildings which could be called a university. Each professor gave his lectures at his home, or in halls rented for the purpose. It was not until about the year 1562 that they taught in the present building, called the Archigymnasium, where all the receptions, addresses, etc., were held during the present festival. The University of Bologna at first taught only laws, as the school of Salerno taught at that time medicine and that of Paris theology. But soon the number of studies increased and teaching divided into four faculties, that of law, theology, medicine, and fine arts. The university gained fame which spread throughout the world. It is said that at one time the number of students was over 10,000. At the present time this university ranks as the most important one in Italy. It possesses fine and rich museums, elegant and well-supplied laboratories, and an eminent faculty composed of men highly esteemed at home and abroad.

The enthusiasm, joy, and cordiality which prevailed among all the students and representatives of every nation, the pomp and the impressive character of the festivities held a few days ago, my pen is incapable of describing. The presence of the royal family, always ready to participate in the joy and happiness of their people, raised the enthusiasm to the highest pitch. On the 9th of June the foreign students began to arrive. At the depot every train on arrival was met with loud cheers and hurrahs. On one side there was a committee of professors welcoming their guests; on the other, hundreds of students receiving their companions with ringing cheers, embracings, handshakings, and congratulations of every sort.

Bologna was unrecognizable; the streets were full of people and animated; every train brought thousands of persons. The hotels were crowded and the foreign representatives were lodged in private homes. Crowds of happy students were seen in every street and recognized by their caps. The law students had on blue caps; those of medicine, red caps; the mathematicians, green, and those of philosophy and letters, white. All these colors mixed together produced a most lively effect.

The reception ceremony at the university building was really solemn. The large court-yard was packed with students, the windows fronting it were filled with ladies. The first lines were occupied by the representatives of the Universities of Berlin, Leipsic, Gratz, Athens, and Edinburgh. The rector of the latter university wore an elegant robe, and he was loudly cheered. The

president of the students' committee, Mr. Pietri, spoke first. He welcomed all the companions present from so many parts of the civilized world. A representative from Athens University responded in the French language, saying that the respect of the Greeks for the *Alma Mater Studiorum* was great ; then followed a representative from Leipsic dressed in a rich and showy robe ; two other students stood at his side. One of them spoke in Italian, saying that the scientific world had sent their representatives to Bologna to make their contribution to the great occasion. A representative from Berlin spoke in a similar strain and was loudly cheered when he said that Germany loves Italy and wants to be her companion in adversity as well as in prosperity. Representatives from Gratz, Rome, Paris, etc., spoke in a similar happy manner and were all greeted with applause. This ceremony ended, they all went to Brunetti's theatre to hear the grand welcome oration delivered by Professor Pauzacchi. The humorous part of the day was the arrival of Padua's students with a mastodonic ox with gilt horns and covered with rich drapery. The Turin students brought a large barrel of good wine, with a student on top of it representing Bacchus, the god of wine; two other students represented a bacchant and a satyr. Next followed the students of Pavia with a phenomenal Parmesan cheese with a student on top representing the goddess Ceres. The procession was a mile long, and as all students were dressed in rich costumes the sight was indeed bewildering.

On the 10th there was a reception by the royal family from Rome, and the unveiling of a grand monument, dedicated to Victor Emanuel, occurred. In the evening there was a gala night at the theatre.

But the 12th of June will be remembered as the most glorious day that Bologna has ever witnessed. It was the greatest day of the festival. From early morning the professors began to meet at the university building. Their different costumes and languages blended in the common brotherhood of science. All were dressed in their rich college robes. The whole city was grandly decorated, and the streets were packed with people eager to witness the grand procession, which began to move about 9.30 a. m. First came the local associations with flags, followed by the mace-bearers of the University of Bologna carrying the old and artistic silver maces. Then came the students of Bologna with their colored caps, followed by the students of the Italian and foreign universities with their respective flags.

The Italian professors came next, dressed in black robes with ermine and wore the doctoral cap ; they were accompanied by their respective mace-bearers dressed in black with short pants and carrying rich silver maces.

The professors of foreign universities followed. First, came those from the United States. The New York professors made a grand impression, being dressed in rich dark-red robes, with impressive caps on their heads. The professors of Baltimore, Cambridge, Iowa, Ithaca, Cornell, New Haven, Philadelphia, Michigan, Virginia, and Wisconsin were loudly cheered. South America had representatives from Buenos Ayres and Santiago.

Professor Raymond West represented the old University of Bombay, India, and was dressed in a damask robe, ornamented on the chest and shoulders with silver bands.

Australia had a professor from the University of Adelaide, and New Zealand had one from Wellington.

Then came the representatives from the European universities, as follows :

First, the professors from Austria-Hungary. Professor Abta, rector of the University of Kolosvar, was dressed in a rich Hungarian costume, and wore around his neck a chain ornamented with precious stones.

Then followed the professors of Cracow with large robes of black velvet ; then

those of Buda-Pesth, Czernovitz, Gratz, Innsbruck, and Lemberg, all wearing black gowns. Those of Prague and Vienna wore blue velvet.

The professors of Brussels, Gand, and Liege wore black robes.

Then came the professors of Copenhagen.

France was represented by a strong body of doctors dressed in elegant violet, red, yellow, and orange colored robes with caps of the same color. Paris, Aix, Bordeaux, Caen, Lille, and Lyons were represented.

Germany came next with a great variety of costumes. The Professors of Berlin had on black robes with red collars and caps of the same color. Those of Bonn, Breslau, Erlangen, Göttingen, and Greifswald wore black robes with mantles of red velvet richly ornamented, which made them look like cardinals.

The doctors of Halle, Heidelberg, Jena, Kiel, Königsberg, and Leipsic were dressed in dark red ; those of Marburg had on black robes with a large mantle of blue and violet colors richly embroidered. Lastly, came those of Munich, Rostock, Strasburg, Tübingen, and Würzburg.

Then came the representatives of Athens, Greece.

The professors of England, Ireland, and Scotland followed ; those of the Universities of London, Aberdeen, Cambridge, Durham, Glasgow, Manchester, Oxford, and St. Andrew's wore large robes of red color with white collars ; those of Dublin, Galway, and Edinburgh had on violet robes and blue collars.

Holland had professors from Amsterdam, Leyden, Utrecht, and Groningen. Portugal had representatives from the University of Coimbra, and Roumania from those of Bucharest and Jassy.

Russia was represented by professors from the Universities of Dorpat, Helsingfors, Kasau, and St. Petersburg.

Spain by professors from Madrid, of Granada, and Orviedo in black gowns with scapularies, which made them look like so many monks ; some had a red scapulary, others violet ; they carried rich gold chains and wore caps covered with falling fringes.

Sweden and Norway had professors from Christiania, Lund, and Upsala ; one carried a little sabre at the side and a pointed cap; and the other a silk hat made up in little folds.

Lastly, came the professors from Switzerland—the Universities of Bâsle, Berne, Geneva, and Zurich.

Next came the great flag of the University of Bologna, followed by all the professors of this university.

This fantastic procession, after passing through the principal streets, amid cheers from every side, proceeded to the Archigymnasium. Every professor was presented with a little branch of laurel and oak. The large court-yard of this historic Archigymnasium was covered by a great pavilion ornamented in red and white. In the centre there was the coat-of-arms of Bologna, with the motto, *Resonavit fama per orbem.* The throne was placed under a large red-velvet pavilion. At the right of the throne was placed the city flag, with the motto, *Libertas ;* to the left the banner of the university, with the motto, *Alma Mater Studiorum.* At ten o'clock the procession entered the court-yard, and all took their respective places. The royal family also entered and took seats on the throne, the king being dressed in a grand uniform of a general. A song, composed expressly for the occasion, was sung by a chorus of voices, after which the rector of the university, Professor Coppellivi, made a short address of thanks. Honorable Baselli, Minister of Public Instruction, then delivered an oration, during which he was frequently interrupted by applause. The poet, Professor Joshua Carducci, was next introduced, and read an address and spoke in glowing terms of the past and present studies of the University of Bologna.

The foreign representatives spoke next. Professor Vogel, of Vienna, speaking in

Italian, hailed Bologna as always keeping lighted the lamps of knowledge. He presented as an homage a parchment and deposited it in a basket placed before the rector.

Klinger, professor of theology in Buda-Pesth, speaking in Latin, presented the good wishes of Hungary, and concluded by saying, "May the School of Bologna long live and prosper."

Pictak, of Lemberg, presented some books.

Rivier, of Belgium, spoke in French and in behalf of his country, and congratulated Bologna on her having the oldest university. He presented some books and parchments.

Professor Scharling, in behalf of the Danish doctors, presented some books.

Professor Hamilton, of Lund, spoke for Sweden and Norway. Speaking in Italian, he said: "At one time they said, '*Ex oriente lux*,' but the Scandinavians say, '*Ex Italia lux*.' Mountains and seas divide us, but virtually we are connected by science, truth, and liberty." He also offered parchments.

Nation after nation followed. When each name was called out the enthusiasm increased in an astounding manner.

When the French doctors came forward dressed in their splendid robes the applause was deafening. Professor Bufnoir, of Paris, mentioned, in an eloquent manner, the relations existing between the universities of Paris and Bologna. They deposited rich parchments.

Professor Hoffman, of Berlin, spoke in Italian and said that half a century ago he was a student in Bologna. He hailed Bologna as the *alma mater* of studies. All the German professors presented rich parchments and books.

Professor Arethens, of Athens, Greece; Professor Jebb, of Cambridge, England; Vasconcellos, of Coimbra, Portugal; Professor Jonesc, of Jassy, Roumania; Professor Wesselofsky, of St. Petersburg, Russia; Piera, of Madrid, Spain; Vogt, of Geneva, Switzerland; Vanzim, of South America all made addresses and presented books and parchments.

Professor Stickney, of Hartford, United States, made a fine address and was loudly cheered.

Lastly, Professor Gandien, of Bologna, made a speech in Latin. He saluted all the guests and wished prosperity to every nation. Amid cheers and applause the ceremony ended at two o'clock.

In the evening over 700 students were seated at a banquet. Telegrams were received from Christiania, Stockholm, and other places. Toasts were given in all languages. President Pietri hailed the companions of all nations, and especially those of Athens, the mother of arts and science. He hoped that France, Germany, England, Spain, and all other nations would work for the international federation of the people. He said that America teaches the world and that Europe ought to imitate the United States. These last remarks were greeted by a tremendous applause. Gladness and good feeling prevailed on all sides.

Over 400 professors of foreign and local universities were also entertained at a banquet offered by the government at another place. Toasts were also made in all languages hailing the king, Bologna, Italy, and all nations.

On June 13, the professors and students met at 9 o'clock a. m., at the Archigymnasium for the distribution of the honorary diplomas to the eminent foreign scientists. The royal family entered at ten o'clock and the ceremony commenced. The square was packed with an elegant and select audience. The sight was impressive. The band having played a selected piece of music composed expressly for the occasion, Professor Pelliccioni, a Greek scholar of reputation, made an address in Latin to the graduates. The presidents of the different faculties called the names of their respective graduates. First, came the philologists, then the mathematicians, the

jurists, and lastly the doctors of medicine. The rector of Bologna's university presented to each one the diploma, and the doctoral ring of the athenæum, into which each graduate introduced a finger and immediately withdrew it.

Lastly, Professor Ceneri, a prominent legal gentleman, in a brilliant address, saluted the scientists present. He was congratulated by the king for his able speech, and warmly cheered by the vast audience.

At 1.30 p. m. over thirty associations, preceded by bands of music and flags, moved in line through the principal streets and entered the theatre to hear the address of Professor Giovanni Bovio, on the life of Giordano Bruno.

The prettiest episode of this memorable festival occurred on this day at the concert hall of the exposition building—the distribution of presents made by the Bologna ladies to the students. The ladies numbered at least 500, and the students preswere not less than 2,000. The students on their part offered flowers to the ladies. A true festival of courtesy.

June 14 was dedicated to the commemoration of Galvani, which was held at the Archigymnasium in the presence of the foreign and local invited guests. Professor Albertoni made the address. He said that it was a happy thought to commemorate the centenary of Galvani with the centenary of Bologna's athenæum, by commemorating and remembering those men that made it famous. Galvani, more than any other scientist, excited the attention of the world, because with his discovery it was thought that the vital force was found. He demonstrated experimentally that the brain is the seat of intelligence. He mentioned the experiments and works of Galvani. He compared the teaching of those times with the present. He spoke of the modern progress of physiology. He alluded to many unsolved problems and urged the present generation to solve them, concluding that the best recompense of work is the eternal memory that history consecrates to them.

After this address the foreign and Italian representatives were presented with special medals commemorating the celebration of the centenary of Bologna's athenæum. The committee then proceeded to place crowns of laurel on the monument, on the house, and on the tomb of the great and immortal scientist.

Thus ended this remarkable festival, which has been solemn in every way, and a true declaration of the gratitude of every nation to the University of Bologna: *mater alma studiorum.* With this commemoration Italy has intended to confirm her past glories to the world, glories of science, of letters, and of arts; and it is right that while in her full triumph, with her new capital, Rome, she affirms to the world her power and greatness.

A. LAGORIO.

CHIAVI, ITALY.

EXTRACTS AND ABSTRACTS.

RE-ESTABLISHMENT OF THE MEDICAL PROFESSION.

In the annual address to the Massachusetts Medical Society, June 13, 1888, B. Joy Jeffries, M. D., of Boston, said: It is very generally agreed that the lawyer, the minister, the squire, and the physician, do not hold the same relation to the community as they formerly did. As that position was one of trust and confidence, it well behooves us to carefully study the causes that have broken it down, and correct if possible any fault lying at our door. On the other hand it is equally our duty to right ourselves before the community, if our efforts have again placed us in a position to be trusted and confided in. Moreover, if the community misjudge the whole from a part of the profession, it is the duty of those truthfully striving, not to have their labors misjudged and injured by any false sentiment toward others not so acting.

There are of course many natural causes

for the three professions not holding their ancient position. They are now but three of many existing in the world. Science and art and technology have introduced distinctly professional fields of study and occupation.

In the older compact and more isolated communities the diffusion of knowledge was less. The three professions represented nearly the whole of it. Moreover, the diffusion of falsehood was less, though credulity remained. All forms of medical chicanery have increased and widened with the means of reaching by the public press and the post-office a larger circle of the ignorant and credulous, poor and rich. Wealth does not now as formerly include knowledge and common sense. Money is more easily gathered than knowledge, and its accumulation does not preclude the continuance of its owner's previous credulity or gullibility. Moreover, money renders its sudden possessor more dogmatic in his superstition and infallibility. The poor man is open to teaching and advice, the rich man thinks that his wealth places him above both of these.

In the village life of former days any question of medicine, natural science, or natural philosophy was referred to the physician, and his decision taken. The common sense imbibed in medical education and practice enabled him to expose the falsehood started by cupidity and kept alive by credulity. The same confidence was reposed in the minister as to all matters of morality or theology, and in the lawyer as to property and legislation. But we are not concerned with them. Our own position alone should occupy our thoughts and efforts.

Why have the profession as a whole lost their hold on the community and the respect naturally theirs? In this country democracy has brushed away any glamour of office, all that which hedges in a class or an organization. Even that which clings longest, namely any peculiarity of manner or dress which separated us from others, has melted away before the sun of common sense and general intelligence. When the physician possessed more knowledge, more education than those about him in his community, he was respected for these as he should have been. But now-a-days those about him have in the general advance of education gained upon and only too often outstripped him. In the struggle for existence the doctor goes to the level that he is entitled to by his education and the refinement this gives him. If the ranks are filled with men without education, except that which they are supposed to have medically, then the laity finding that such are destitute of the former, very fairly doubt the existence of the latter. Good breeding and a good education are not now as formerly the natural attributes of those legalized by a diploma. Cheap and charity medical schools have multiplied over our country to a greater extent even than seminaries, colleges, and so-called universities. The profession well know that these medical schools are but local advertisements, and that in their struggle for existence they underbid each other, not only as to medical education, but also receive as students and give medical degrees to men comparatively destitute of even a common education. The various State legislatures grant these medical schools the power to issue such degrees, which the laity ignorantly accept as a proof of education, and that is what they are sold and bought for.

Now, in course of time the laity have found out that the holding of a medical degree, being a doctor, does not preclude ill-breeding and lack of education. And they have naturally arrived at the conclusion that a medical man may be pretty low in the social scale, gauged by education, hence that the study and practice of medicine mean but little.

To give every individual in the community, without respect to color or sex, an opportunity for the best education he can attain to and his ability deserves, is a noble charity on the part of the State or the pri-

vate citizen. For the public or private institution to sanction by its seal ignorance and quackery in any form, is simply cheating the community for the moneyed benefit of the few and unworthy. The poor and unlearned are deluded by the title of doctor, and the delusion has the sanction of the State by the judge on the bench deciding that one medical degree is as good legally as another. The laity know nothing of and cannot judge medical matters, and hence are easily duped into giving State sanction to any and every form of rascality under the guise of medical teaching, from a Druid college to a Christian Scientist's bucket shop, thus helping to fill our grave yards and insane asylums. The community demands protection in everything except precisely where it needs it, namely, from ignorance, prejudice, and superstition.

It is from such causes, it seems to me, that the medical profession as a whole has dropped in the social and educational scale, lost power and lost influence. The public recognize that it is largely entered into as a trade or business, and that many of its members hold degrees and diplomas purchased of the mills, legalized it is true. But so are the dram-shop and saloon legalized. The professors in our law schools well impress on their students that law has nothing to do with justice. One doctor is the same as another to the public to such an extent that even men of attainment and culture fail to distinguish the honorable and well-educated physician from the quack and the charlatan.

I have found many truly scentific men treating us most unfairly in this respect. They tolerate licensed or unlicensed pretenders in medicine without separating them from those of the profession whose knowledge and proved ability really place them on an equality with themselves. They give credence to and put faith in, associate with, men whose ignorance, charlatanism, and want of breeding are such as they never would admit them in their own field of study. Men of science in other branches receive from no class greater recognition and respect than from the best men in our profession, who know enough to appreciate knowledge and its attainment. It is but fair that we ask of them such discrimination as they employ toward each other, and not attribute any protest on our part to narrowness, professional jealousy, etc. It can only be that they as members of the laity imbibe prejudice from inability to discern and judge of medical matters.

The teachers and the examiners in the best medical schools all over the world are demanding greater educational requirements of men desiring to study medicine. And this most rightly, because it is impossible to teach medicine to those without thorough foundation. They cannot learn, and to give them diplomas half earned but adds to the load the educated portion of the profession have to carry. The refinement which education gives is needed in the practice of medicine. Education of a high standard is needed for the doctor to hold his proper relations to the community, besides a thorough knowledge in his calling.

Medicine can only recover its former just position when the world is forced by its existence to recognize that to be a graduate of a good medical school means to have the education of our best universities in addition. The world will not now believe and trust in a man's medical knowledge unless they have proof of other education besides, which adds force and power and refinement. The doctor must be, can be, and will be, a man of science. As such we can ally ourselves with the great body of men striving for knowledge and seeking truth. From the lack of this a large part of our profession is not distinguishable from the man of business or the tradesman, perhaps perfectly respectable, but perfectly commonplace, and worthy only of the position trade and business take in the community.

The avenues to wealth or official power are quite outside our calling. As physicians we cannot compete with trade or business. But this is our common lot with

other scientific men. Wealth is a mighty power but it falls palsied before knowledge. Slowly but surely, I believe, is the former yeilding place and respect to the latter. Certainly Crœsus is never more flattered than when treated as possessing knowledge, education, and the refinement it brings.

Are we not in honor bound to do all in our power to bring up the standard of education and the standard of professional requirements in our calling? Educators tell us that it would be a good thing for the world if nine-tenths of our so-called academies and little colleges were swept away and merged in large and strong institutions. Certainly it would be a good thing for the world and for our profession if nine-tenths of the medical colleges were swept away, and what was good in them gathered into a few great medical universities, placed where teaching and study could best be carried out.

Why should not this society quickly raise its standard of requirement for admittance, such as would render membership a proof of educational refinement and professional knowledge? I grant you that moral courage and backbone are needed to do this. But I insist that the possessors of these exist among us, and await only support from the majority. Let them have it, and this at once, or else the best men in the profession must separate and form themselves into a body known and respected for possessing what the others do not. May this necessity never come in my day. But we must sympathize with the man of scientific attainment and educational refinement, forced to recognize another who is ill-bred and half-educated simply because the latter holds also a medical degree which insures nothing of these. That is trades union.

I hear expediency, desire to conciliate for ultimate purposes, compromise, saying, perhaps with bated breath, we cannot be so high toned, we cannot expect doctors to have the refinement of education, or more professional knowledge than enough to get along in practice. I answer at once, with no hesitation or reservation, that there is an increasing number of men in our ranks who have educational refinement and high professional attainments.

Again, I hear it said that the requirements of a physician's vocation tend to break down his literary life and hinder any advance in his medical study. This is but an attempted defence of the ignorant who never should have been allowed to enter our ranks, and who have done so for trade through chicanery. No one of the laity has to descend to the low offices the sacred duty of a physician calls upon him to perform for his patient. Such never detract from his refinement or his dignity. Circumstances may call upon us at times to do any manual or menial work. We elevate it, not degrade ourselves, by performing it as a part of the burden we assume with our title. * * *

Education is the teaching the hands to work at advantage and the brain to think rightly. Certainly this applies to medical education. Proper medical education can not be given the ignorant young man, and only young men should be made doctors. If the hands and brain have not been trained how to work they can not be properly employed in the higher field of human activity occupied by the physician. The advance in modern education comes not from additional amount of facts poured into the school boy or student, but from applying improved systems by which brain work tells better.

It *is* possible to teach the power of observation, deduction, the application of principles, and sharpen the brain, the wits to seize the time for action. The medical schools admitting young men without such preparation, even if they attempt to teach well and thoroughly, never can turn out the best physicians.

The young man in this country who wants to go into medical trade thinks he has only to learn a little and get his diploma as he would fit up a grocery shop. The

community thinks so too. The so-called medical colleges scattered over the country are ready to help him for the fees he can scrape together to pay them. This tradesman opens his shop for custom, and the world looks upon and patronizes it like any other shop. But in medicine, as in all the true professions, work but commences with the responsibility of occupation, and never ceases while that lasts. Better for a man if it lasts through his life.

Now these medical colleges, backed by the community, want the profession to foster such trade doctors, and have us accept them as colleagues. These men themselves claim our support and recognition, and would pull us down to their level to help their trade. The time has amply come for this to stop. The physician must rest on his individuality, on his learning and his power of using his knowledge.

If you carefully observe the men teaching and learning in this and the two adjacent buildings,* and then compare them with the men teaching and learning in the building further on, in which we are, or should be, all interested, there will be found a difference of a peculiar and subtle character, the difference between the medical and the technical man. Perhaps only our profession can understand this. I have found very shrewd men in other professions, even the allied ones, much puzzled by it.

Here in technology, arts, sciences aside from us, the student learns facts, physical laws, principles, and their adaptation to physical conditions, and relies on set and fixed laws and rules for action. His work in life is a continuation of this. Here two and two make four, and can always be depended on as making four, mathematically deducible and proved, as we say.

Now in the other building the medical student learns also facts, physical laws, and natural principles. But in practice he has to apply them to unnatural conditions, disease. And he learns that the conditions of disease render mathematical application of seemingly fixed principles impossible. Two and two may not make four, and he must be able to grasp this fact. The study of medicine is for this, and four years is little time enough to learn the needed facts, their application, and, so to speak, misapplication. This it is which besides all else separates us from other professions, and but puzzles them. They see us arriving at results from data that their knowledge and experience prove mathematically can *not* come. This elusive something is the spirit of medicine; he who has it most will most successfully be able to detect and cope with disease, be the most successful physician.

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Since the slavery rebellion our nation has settled down to its civilization. Has our profession advanced with increasing education? Not the whole of it, for the reasons I have given. But there are many more men than ever before giving their strength and lives to the accumulation of knowledge in our calling and its diffusion. Never before have there been so many men so highly educated in medicine as now. I cite as proof, the papers and discussions at our society meetings, the articles published in our journals, the respect our best men are gaining from the thorough medical scholars and teachers of England and the continent. I cite further the greatly increasing number of physicians in the various branches of medicine who are becoming good and valuable teachers among us. Never before have we had such competent and thoroughly taught practitioners under thirty years of age. Never before have we had so much true scientific work going on in our profession. The graduates of even our best schools are not competent to stop their work, but seek in Europe the best teachers, to compare their acquirements, and bring back to us the highest medical culture of the old centres of learning.

* Buildings of the Institute of Technology and Natural History Society.

Should these men be classed with the ill-bred and half-educated graduates of the remaining nine-tenths of the medical schools of this country? Because they have the same title, must they be put on the same plane as the business and trade doctors our communites are overrun with? Yet this is precisely the way they are at present treated and regarded by the laity, who make no distinction between one physician and another. And this by all classes of the laity, high and low, rich and poor, learned and unlearned.

The scientific man is often now startled by finding "a doctor" familiar with his own department. It is quite a revelation to him. Why, nearly all the work in the various sciences outside ours, now followed as professions, was formerly done by men, graduates in medicine.

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I am free to ask, Is our school and others like it doing *all* needed to fit men to practice medicine, to use their hands and brains professionally? The success and the growing number of poly-clinics and post-graduate courses, right among our best schools, seem to me to positively prove that the student and the graduate find there is something more to be learned, and something worth giving time and money for. What better argument for the need of an additional year's study, however this may have to be arranged in reference to the under-graduate department of our universities and colleges?

If there are men who can as teachers attract earnest students outside of the regular courses, I do not see why they cannot be employed as teachers in the schools of four years' curriculum. This extra outside teaching I think has hindered the adoption of a four years' course as compulsory. It has fostered unfortunately the worst form of trade doctors among us, namely, the "two to six weeks'" fully fledged specialist with any "scope."

I disregard the objection to four years on the score of cost. The men who built our present medical school did not stop for this sort of objection, and time has proved them right. I record here my conviction, and I wish I could record the conviction of this society, in the support of the teachers and workers trying to elevate the standard of the profession, and thus, for only thus can it be done, replacing our calling in the respect of the laity, at the same time completely separating us in their judgment from the bands of quacks, trade doctors, *et id genus omne.*

It is perhaps naturally expected of me here to say something in favor of those much *used* and much abused physicians called specialists. Whatever may be said against them, it must be admitted in candor that to stop the work they are doing would check the scientific advancement of the profession as a whole. Specialism means work, seeking science, knowledge, truth. It cannot be said that they keep from the profession or the world the results or benefits of their labors.

The same is now unfortunately true of the specialties as of the general profession. All I have said as to the laity's inability to distinguish between the true and the false applies with ten-fold force as to specialists. Physicians recognize this even in their own inability to decide between pretence and talent, knowledge and ignorance, experienced training and assumed.

I greatly respect other specialties, and cannot see how we can get along without them. I have to thank the men of talent and standing practicing them, and have always found them as willing to help me as I them. * * *

It was said in praise of a physician who died some years ago, that he was never seen in any place his profession did not call him. It was a proof of devotedness to his calling. In the then relations of the doctor to the community perhaps it was wise and necessary. All that has certainly passed away, never to return. We are now forced to be *en rapport* with the world,

its people and affairs, and, I believe, with a gain thereby to our usefulness in the practice of our profession. The more a man knows outside of and in addition to his medical work, the better physician will he be. Such knowledge will never hurt his professional judgment, and will very often give him thereby a better opportunity to enforce what he knows to be necessary.

When a patient finds that we are by no means ignorant of *his* special work or business, can express an intelligent opinion thereon and have some interest in it, then that patient is now-a-days much more likely to respect our professional advice and follow it. We have to guide and govern men and women, and we cannot without respect from the governed.

The community somehow still have an idea that physicians as a class are not capable of anything else than their own work, without business capacity, not practical. This certainly is not now the case.

Not only is a physician now-a-days allowed, if I may so say, to have some knowledge of the world of affairs, but he is beginning to be granted some familiarity with literature or with scientific pursuits, even when the latter are not directly connected with medicine. The profession at large and a part of the laity now begin to recognize the value of scientific thought and scientific study in our calling. It does not now hurt a man to be known as scientific—that is, seeking knowledge by mental labor. There was a time when this was a positive detriment, and militated against a man's opportunity to gain a livelihood.

In the great world of scientific work our profession is needed and has its place. Its labor is special and separate, but calls strongly for thinkers, observers, truth-seekers. This is the study of medicine, whilst the practice calls for the greatest endurance, patience, forbearance, toleration, and courage, physical perhaps as well as moral. A thoroughly educated physician is a man of no mean parts, and will be able to hold his own with others in the world's affairs. His training makes him a *gentle*-man.

We should not resent but welcome the coming into the profession of young men with wealth and means that render them independent of work. Even if they practice, they have the right. It was once said with some truth that the possession of thirty thousand dollars would kill any man's advance and work in our calling. That is not true now. But the young men I speak of are most valuable in softening the spirit of gain and strife. There is work in abundance for them, and to advantage of us who must delve for our living. Their position enables them to do for us what we most need but can not accomplish. They have hours for work without anxiety.

To study medicine and take a degree in a first-class medical school after a collegiate course is a training most valuable. The knowledge gained is aside and besides all other, placing the graduated physician at very great advantage over his literary, artistic, and other professional friends. Moreover, the study of medicine is earnest, serious, mentally stimulating, and gives a man breadth of character. It teaches him the value of work. One of the class of young men I am speaking of, whom I had advised to follow our profession, said to me with great satisfaction and self-respect: "To graduate here at our school sickens one for loafing and idleness."

The student learns that life and happiness mean work, work for others or self, but work, without which life at last is found not having been worth the living. The graduate learns also that there is no place in medicine for the Bohemian or the dude; that all attempts to act or imitate the one or the other are wholly out of place, as any of the peculiarities which were the marks of a physician in gone-by days. Even the white cravat worn at other times

than when socially demanded, is now pretty well recognized as a medical hypocrisy, Chinese mourning for departed patients. The true physician does and should dress as any other quiet gentleman.

Fortunately for us in this present day, and for the communities in which we live, the absence of means does not preclude the possibility of preparatory and medical education, and that of the highest grade. The State and the individual citizen has now given every man a chance who has brains to use and is willing to use them. It is the State's and individual's *charity*. Harvard University is an endowed educational charity of which every graduate is a recipient.

But absence of means must be an incentive to action, to labor, to study. For myself I know that any good which I have done for the community or for myself has been done from the pressure of complete dependency on my own action. I believe every man finds this the case in life, hard as it may seem to him: Necessity is the mother of invention and the father of success.

In the *Kampf um Dasein* let us join hearts and hands and brains for the re-establishment of our beloved profession.

BOOK REVIEWS AND NOTICES.

ANNUAL OF THE UNIVERSAL MEDICAL SCIENCES: A Yearly Report of the Progress of the General Sanitary Sciences Throughout the World. Edited by CHARLES E. SAJAUS, M. D., Lecturer on Laryngology and Rhinology in Jefferson Medical College, Philadelphia, etc., and seventy associate editors, assisted by over 200 corresponding editors, collaborators, and correspondents. Illustrated with chromo-lithographs, engravings, and maps. 1888. Philadelphia and London: F. A. Davis, publisher.

The object of this work, as stated in the preface, "is to collate the progressive features of medical literature at large, and clinical data from countries in which no literature exists, and to present the whole once a year in a continued form prepared by writers of known ability. As such, it is expected to become a helpmate to the practitioner in his efforts to relieve suffering and to assist the investigator by correlating facts."

The work for this year appears in five octavo volumes of about 350 pages each. The table of contents of each volume is upon the back of the cover, for the convenience of ready reference. At the end of the work there are three indices in parallel columns, viz., a general index, a therapeutic index, and a bibliographical index.

The articles give abundant evidence that the work has been carefully done.

The editor is to be congratulated that in so large an undertaking he has been able to so nearly accomplish the design. His efforts will be gratefully appreciated by a host of our busy confrères who have not the time to sift the wheat from the chaff. The editor recognizes the fact that a publication of this nature appearing only once in a year greatly detracts from its own usefulness by often not presenting material till long after it has become public property. To overcome this drawback a quarterly journal is published in connection with the annual —*The Satellite*—which is intended to present to the reader all the new important facts published during the preceding three months, and especial y those bearing upon the prevalent diseases of the season.

The annual and its satellite have fairly started upon their yearly and quarterly revolutions. We hope that each succeeding round will bring them to us more symmetrical, more nicely balanced, more nearly perfect.

A SYSTEM OF OBSTETRICS BY AMERICAN Authors. Edited by BARTON COOKE HIRST, M. D. Vol. I. Philadelphia: Lea Brothers & Co. 1888.

The first volume of this publication, including the contributions by Drs. Engelmann, Hirst, Jaggard, Busey, Penrose, Reeves, and Parvin, has been issued.

The history of obstetrics could not have been intrusted to abler hands. Dr. Engelmann has produced an admirable summary of his subject. The physiology and histology of ovulation, menstruation, and fertilization, the development of the embryo, have been fully and ably treated of by Dr. H. Newell Martin. Dr. Hirst has complete chapters on the development, anomalies, monstrosities, diseases, and premature expulsion of the ovum. Dr. Jaggard writes with his usual clearness of the physiology, pathology, signs, and differential diagnosis of pregnancy. It is a disappointment that so learned an obstetrician as Dr. Jaggard could express himself no more positively in reference to the question of changes in the neck of the gravid uterus than to say "The weight of evidence seems to us very much in favor of Bandl's modified theory." It is now seventy-five years since Madame Boivin wrote the sentences which follow:

"In fact, the neck of the uterus at term alone forms more than a third of the cavity of the uterus."

"Accoucheurs are continually speaking of the internal orifice in the last months of pregnancy. They forget that the os internum has long been effaced."

"The circumference of the uterus at term, measured at the top of the uterine portion of the neck (which is then five inches above the external orifice), is about thirteen inches."

It is fifty years since Guillemot, in referring to hour-glass contraction, wrote:

"When the hand is introduced the cervix is found projecting into the vagina, and so disfigured that it resembles a section of large intestine; but about five or six inches above this the finger is arrested by a kind of stricture which is the wrinkled and contracted internal orifice."* The views of changes occurring in the cervix deducible from these two authors are perfectly consistent, it seems to us, with every fact regarding the anatomy, physiology, and pathology of the uterine neck, before, during, and after labor. And yet, such is the force of preconceived opinion that to-day not a single author of a work on obstetrics has completely emancipated himself from such apparently irrational and inconsistent theories as were put forth by Stoltz in 1826.

The views of Boivin and Guillemot, current in Chicago for the last fifteen years, have been accepted with all their conclusions by a number of physicians of this city. So far as is known, nothing has been observed in their practice to contravene their adopted opinions. It is to be hoped that in the next volume of the American System of Obstetrics, the writer upon placenta prævia, taking a hint given by Madame Lachapelle three-quarters of a century ago, will locate the placenta below the os internum.

The conduct of labor and the management of the puerperal state are treated of in an able and interesting manner by Dr. Samuel C. Busey, in a style that pleasantly recalls the writings of Dr. Meigs.

The mechanism of labor, and the treatment of labor based on the mechanism, are treated of by Dr. R. A. F. Penrose. Though these subjects are presented in a manner vigorous, thoughtful, and fresh, many readers will doubtless have occasion to dissent from some of the positions taken by the author. For example, it would seem to us that Dr. Penrose takes an exaggerated view of the difficulties and dangers of occipito-posterior positions. We object to the advice given by the author in reference to the conduct of the obstetrician where he has not succeeded in delivering in these cases by the several methods suggested After a consultation, a mere formality, he is advised to perforate at once, or "to abandon, instantly, the case." This conduct might be very proper for Dr. Penrose, but for the average practitioner it would be impolitic, unwise, and censurable. So far, nothing has been demonstrated in the suppositive case except that the means adopted have not succeeded in the hands of the attendant in charge. To the consultant, as skillful as Dr. Penrose, success might follow any one of the means with which the inexperienced operator has failed. In midwifery there is no call for dogmatism of opinion and obstinacy of purpose. Nor, it may be added, is there in the exigencies of the lying-in chamber need of "heroism" or "heroics"; better than these is calm courage.

The article on the use of anæsthetics in labor, by Dr. J. C. Reeve, is excellent. Dr. Parvin writes the chapters on the anomalies of the forces of labor with his usual ability.

This volume is replete with facts of the greatest interest to the obstetrician, and we commend it accordingly.

PRACTICAL ELECTRO-THERAPEUTICS. By WILLIAM F. HUTCHINSON, M. D. 8vo. Pp. 247 Philadelphia: Records, McMullin & Co. 1888.

The author's motto, "That he who runs may read," is well exemplified in this book. It is a concise treatise upon electro-therapeutics stripped of theoretical considerations. The relative merits and demerits of the different varieties of batteries and electrical apparatus, and the manner of using the various appliances and the results to be expected from their use, are briefly considered. The chapters upon the special medical and surgical uses of electricity contain many clinical notes. The author has availed himself of his rich experience to show how and under what circumstances treatment should be conducted, often entering into the minutest details in explaining the technique.

The book will be a very useful one to the many members of our profession who have not been able to spare the time to master this subject, and it will certainly be read with pleasure and profit by the many who are already familiar with the facts of which it treats.

HENRY'S POSOLOGICAL AND THERAPEUTIC Tables, containing the Doses, Action, and Uses of the Medicines in the British Pharmacopœia, with poisons. Third edition. Revised and enlarged. Pp. 83. 12mo. Edinburgh: Maclachlan & Stewart. London: Simpkin, Marshall & Co. 1888.

Is a small dose-book based upon the British Pharmacopœia It has in addition to the list of preparations of drugs with doses, action, and uses, a catalogue list of diseases with drugs that have been found useful in each, and a list of poisons, their action and their antidotes.

* Cazeaux.

Edw. Jenner

EDWARD JENNER, M. D., LL.D., F. R. S.

"My opinion of vaccination is precisely as it was when I first promulgated the discovery. It is not in the least strengthened by any event that has happened, for it could gain no strength; it is not in the least weakened, for if the failures you speak of had not happened, the truth of my assertions respecting those coincidences which occasioned them would not have been made out."